

PSYCHOLOGICAL PREDICTORS OF SUICIDAL BEHAVIOUR

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ABSTRACT. It is generally accepted that there is a rising suicide rate among young people in most Western Societies, and the literature is reviewed with particular reference to this. New Zealand statistics suggest there is reason to believe this trend has occurred here also. From the point of view of a psychological model there are at least two pertinent questions to ask regarding suicidal behaviour: (a) why is there a sudden rise in first-ever attempts at suicide at adolescence? (b) what psychological variables predispose an individual to engage in suicidal behaviour?

One way to approach an answer to the first question is to examine suicidal behaviour across an age range, with reference to several psychological variables. For the present study data was collected from 34 subjects (14 males and 20 females) at Christchurch Public Hospital, who had either attempted to commit suicide, or had threatened to do so, or had presented to a crisis intervention service with prominent suicidal ideation. The following hypotheses were tested across an age range from the 13.0 years to 54.9 years (mean = 27.9; s.d. = 11.17): (i) that peer-related concerns in comparison to family concerns will be amplified for some adolescents' suicidal behaviour compared to other age groups, (ii) that suicide attempters may use different ways of coping in stressful encounters than suicide ideators and/or threateners, and (iii) that suicide attempters will score more highly on a measure of alexithymia than ideators and/or threateners. Results indicated that, for this sample, family and peer-related concerns varied to a certain extent across age, but that neither were significant predictors of suicidal behaviour in multiple linear regression analyses. With respect to the second hypothesis planful-problem solving was found to be related to a general measure of suicidal behaviour. Confrontive coping, escape-avoidance and planful-problem solving were found to be related to the more serious forms of suicidal behaviour. Age effects for coping style were not observed for this sample. With respect to the third hypothesis, alexithymia (at least as measured by the Toronto Alexithymia Scale) was found to be unrelated to suicidal behaviour of any type.

The second question related to psychological variables which may predispose an individual to engage in suicidal behaviour. These may have predictive (and therefore primary preventive) utility. Using the data from the same 34 subjects, multiple linear regression analyses were employed to weight the unique contribution of several factors to the development of suicidal behaviour: age, sex, reasons for living, ways of coping, social desirability, hopelessness,

depression, and alexithymia. Three analyses to elucidate causal factors were performed. The first found that depression was related to a general measure of suicidal behaviour, whilst both reasons for living and coping styles contributed to prediction of current suicidal feelings. The second analysis focused on the subscales, or parts of both reasons for living and coping styles. Evidence for the notion that individuals who used planful ways of coping with problems, and who had less fear of social disapproval with respect to suicide were more likely to engage in suicidal behaviour was observed. The third analysis involved a linear multiple regression model constructed from the data available from all the variables measured in the study. This analysis indicated that there were qualitative differences in psychological predictors across varying degrees of severity of suicidal behaviour. It is concluded that individuals who have engaged in the more serious variety of suicidal behaviour, especially serious attempts, used a coping style characterised by planful solving of problems, and confrontive action. Individuals who have engaged in a high frequency of suicidal ideation were characterised by their belief that it is worth not committing suicide because of what others might think of them, especially in terms of being weak and selfish or out of control. It is suggested that this concern over social disapproval is enhanced by our cultural taboo of suicide. With respect to current ideation, individuals were characterised by ownership of both the planful style of solving problems, and the belief that a reason to live is to avoid the disapproval of others.

Limitations of the current research are discussed, as are methodological problems of suicide research in general. The small sample available for the study makes necessary the caution regarding the exploratory nature of the results advanced. Directions for future research are discussed, the single most important thread being that more research is both justified and needed.

Introduction and Review of the Literature

1-1 *Is there a need to study Suicide and Suicidal Behaviours?*

Suicide and suicide attempts are currently viewed as a major public health problem. Awareness of this problem has caused researchers from many disciplines to focus on the phenomenon in an effort to reduce its incidence.

"In recent years, suicide has attracted increasing attention as a large-scale social phenomenon. In the United States, at least 25,000 people kill themselves every year. Worldwide, the number of completed suicides is well over 500,000, equivalent to the population of a city the size of Edinburgh, Scotland, or Jacksonville, Florida, and as many people attempt to kill themselves as live in London or Los Angeles. In the U.S., an individual is three times as likely to kill himself as to be killed by someone else, and the risk of death from suicide is greater than if there were a fully-loaded jumbo jet air disaster *every fifth day*. "

Margaret Battin (1982, *Ethical Issues in Suicide* , p. 1).

In world terms the incidence of completed suicide is the equivalent of *homo sapiens* killing himself and herself at the rate of a fully-loaded jumbo jet aircraft at least every eight hours. This estimate is based on an overall rate of 12 to 13 per 100,000 , which has been the case for the past 30 years (Klerman, 1987). It is almost banal then to say that suicide and suicidal behaviours are worthy of study.

In both the following review of the literature, and the current research, it is intended to focus especially on suicidal behaviours which are present among the young. Partly this is due to the sheer quantity of the literature, and partly due to

the recent changes in epidemiology of suicide which have been observed especially over the last twenty to thirty years. These consist of marked increases in both suicide attempts and deaths by suicide among teenagers and young adults (Klerman, 1987). This will be discussed in greater detail below. One focus of the present research is to attempt to elucidate psychological predictors of suicidal behaviours in general (which may include any thoughts or actions which if carried out fully could lead to serious injury or death). Another important focus is the issue of whether or not any of the possible psychological predictors are developmentally based. That is, it is intended to focus on the possibility of age being a factor in the (psychological) development of suicidal behaviour. Death by suicide for teenagers and young adults carries a particularly poignant sadness, leaving the feeling that life was thwarted at a stage before its full benefits have had a chance to be made available.

Knowledge which helps us to understand *how* suicidal behaviour develops in people of any or all ages is of great value to help prevent, or at least limit, its occurrence. Prevention can take many forms. What is commonly termed primary prevention has at least two aspects. The most immediate of these involves the identification of probable cases prior to the development of serious suicidal behaviour. Intervention can follow accurate identification. Primary prevention can also be a more general goal in society. Understanding the etiology of suicide may be able to help us better structure our society, our educational goals, and familial patterns so as to limit the production of suicidal behaviours among our citizens, of all ages. Secondary prevention is the term usually applied to intervention with an individual who has overtly manifested suicidal tendencies. Once again, etiological knowledge is of great value in determining *practical* steps that may be taken to treat the individual in such a way as to reduce the likelihood of escalation or repetition of those suicidal tendencies.

1-2 Suicide and Suicidal Behaviours: Concept and Definitions.

The measurement, and therefore the study, of suicidal behaviour presents some conceptual and practical difficulties. This has led to a plethora of terminology such as suicidal intent, suicidality, parasuicide and others, not all of

which are well-defined. Whilst an operational definition of completed suicide may be *prima facie* straightforward, it is also clear that by its very nature suicide involves an "intent" to die and a "deliberate" act inducing death. Ascriptions of intent are subjective and commonly *post hoc*. Even when individuals express intent, it is difficult to ascertain how well they understand the determinants of their own behaviour. This issue is quite likely even more pertinent in relation to youth given the developmentally-based concept of death (Hawton 1986).

Individuals who are determined to be suicides are not available for study. In general a verdict of suicide is recorded only if there is clear evidence that the injury was self-inflicted and the individual intended to kill himself (McClure 1986). Coroner's verdicts are also sometimes appealed against by families, who may not wish to have a death recorded as suicide due to strong religious beliefs, for example. It is therefore highly likely that some suicides are incorrectly classified.

The complexity of "suicide" was sagely described by Austin Porterfield (1968) as octagonal, with semantic, statistical, historical, religious, philosophical, psychological, sociological and action-related dimensions. Furthermore, it is readily discernible that whilst the definition of suicide is complicated, there are even more confusions of meaning when the adjective "suicidal" is used. Shneidman (1976) has suggested that we should no longer use the category of suicide - along with the other N-A-S-H (Natural, Accidental, Suicide, Homicide) categories - and instead to classify all deaths in terms of the role of the individual in his or her own demise as intentioned, subintentioned or unintentioned. However, whilst these proposed categories may help discriminate Accidental deaths from Suicide, they ignore the practical and necessary distinctions between these two categories and death from Natural causes or Homicide. Such distinctions are clearly useful to law enforcement agencies, and health professionals. It seems, therefore, that the term "suicide" has not yet outlived its usefulness. But, it may also be pointed out that suicidal behaviour is not a unitary phenomenon; hence sub-classification is a necessary yet tricky exercise. It is argued that the major hazard lies in the conceptualization of *intentionality*.

What then is intention, beyond the simple response that it is purposeful behaviour? At least part of the answer may lie in that very purposefulness of intentional behaviour. By implication there is an inherent goal structure, however abstract. In performing a behavioural sequence under control of a goal

structure, one can hit points where insufficient information exists to achieve the next goal. John Anderson (1983, p. 168) provides a useful example (abbreviated):

IF the goal is to place Y in a puzzle
and Y does not fit into any available location
THEN set an intention to later place Y in a location
and POSTPONE the goal.

Later achievement of the goal requires memory for intentions. Intention then, at least from a cognitive process point of view, is some kind of bridging mechanism that maintains, or perhaps connects a behavioural sequence. Beyond describing production systems of such a process, current cognitive theory (such as ACT; Anderson, 1983) does little to illuminate the phenomena of intentionality. At least part of this is due to the implicit reductionism in such theory.

Intentionality is a term for "aboutness" as observed by Stilling et al., (1987). The thought that the full moon is beautiful is intentional, because it is about, or contains, the full moon. Intentionality, however, requires some kind of appropriate causal relation to the world. Therefore a (cognitive) representational structure, in order to represent some state of affairs, must typically be triggered by that state of affairs, or something similar, and then itself will usually trigger behaviour appropriate to that state of affairs or something similar. Intentionality then becomes that feature of certain 'mental states' by which they are directed at or about objects and states of affairs in the world. Such 'mental states' are experienced as (subjective) consciousness.

Phenomenological philosophers have long argued that our thoughts and feelings have a purpose and that this purpose comes from some 'essential' person (e.g., Husserl, 1913). Furthermore, that a thought or feeling is about something, that it reaches out, and is thereby intentional. Such reasoning has provided the basis for the phenomenological approach to psychology, whereby the main concern is with what a person experiences. Experience, and its accompanying conscious processes, are assumed to provide a causal role in determining behaviour. The subjective experience of the state of 'intent' is not likely to be captured by the recently devised reductive analyses (such as cognitive, behavioural), for they are logically compatible with its absence. All of this suggests therefore, that in attempting to judge intent in suicidal behaviour it is necessary to make some reference to the individual's subjective experience. Fortunately this is possible in the case of individuals engaging in suicidal behaviour that does

not result in death. Besides the approach to examine subjective experience, some investigators have attempted to discover correlates of suicidal intent, which may be used to infer its presence. Intuitively it would seem reasonable that suicidal intent should be closely related to the lethality of any self-injurious behaviour. In fact high lethality and high intent to die have been found to correlate significantly (e.g., Worden, 1976). However, to classify suicidal behaviour on the basis of intent to die, or the intensity of the wish to end one's life, is difficult. Some individuals make an attempt of a highly lethal nature but calculate that they will be rescued before they die. Other individuals make an attempt of relatively low risk but the attempt is successful due to miscalculation.

A relevant question then, is can suicidal intent be reliably inferred from the lethality of the attempt? The major obstacle to answering this is that past research has held little consensus on how intent should be measured (Linehan 1986). Some studies have relied on Beck's Suicide Intent Scales, some on clinicians' judgements made on the basis of unspecified criteria, and some on the medical consequences of the suicide attempt. This has probably led to the inconsistent correlations that have been observed. For example, Brent (1987) reported a significant correlation ($r = 0.30$) between medical lethality and suicidal intent. However, this study was conducted with the researcher assessing all the variables from case notes, possibly creating an inflated correlation result (as noted by the researcher himself). Beck & Kovacs (1975) found a correlation between lethality and intent of 0.19. Linehan (1986) described four studies showing no significant correlation between intent to die and the lethality of the method used in the attempt. Plutchik et al., (1989) concluded that we must proceed on the assumption that these two variables are probably unrelated and should be independently measured. David Shaffer (1989) concurs with this viewpoint, pointing out that medical severity of an attempt is not a good predictor of future success at suicide. The wish to die, or intent, is a much better predictor. Pokorny (1983) reported that a history of serious suicide intent may increase the suicide rate by more than 70 fold. Earlier, Pierce (1981) followed 500 patients for five years, and reported that suicidal intent (as measured with a modified Beck scale) was useful for estimating eventual suicide risk among suicide attempters.

A related approach to the measurement of medical lethality, to infer intent, has been Weisman's & Worden's (1972) Risk-Rescue rating. This quantitative assessment includes a score based on both the medical dangerousness of the

attempt, and the likelihood (or its lack) of being interrupted (that is rescue). Whilst providing an admirable step in the direction of quantification, such a scale does little to illuminate the complex issue of intentionality. An individual making a very dangerous attempt with a high chance of interruption can yield an identical score to one who makes a low-risk attempt, yet with little likelihood of discovery. Furthermore a recent study has demonstrated that interrupted attempters are approximately three times more likely to eventually complete suicide than uninterrupted attempters (Steer, Beck & Lester, 1988). It therefore appears that the relationship between risk of an attempt, likelihood of rescue and interruption, and suicidal intent is not as linear as the model proposed by Weisman & Worden (1972).

The author suggests for the purposes of the current study that terms be defined as follows:

suicidal behaviour refers to those thoughts or actions which, if fully carried out, could lead to serious injury or death. It can include any combination of suicidal thoughts, ideas, gestures, attempts or completed suicides. Clearly the broadest category (Godwin, 1986).

suicide threat is a statement of intention to commit suicide with no relevant act to do so (Godwin, 1986).

suicide gesture is an act very similar to the suicide attempt; however, the person neither has the intent to end his/her life nor the expectation to do so (Godwin, 1986).

suicide attempt is a serious *intention* of killing oneself without fatal consequences, generally because unsuitable or inadequate means are unknowingly used (Godwin, 1986). For example a young or inexperienced person may attempt suicide by use of a single aspirin or other nonlethal drug dose, or may cut a wrist without damaging a major blood vessel.

Godwin (1986) noted that the term *concealed suicide* is sometimes applied to an intentional self-inflicted death which is camouflaged as natural, accidental or homicide. Cole (1988) defined *parasuicide* as meaning suicidal ideations, threats, gestures and attempts. This is remarkably similar to the meaning of the term *suicidal behaviour* as defined above. In order to avoid redundancy it is proposed to use the latter term in the current research. It may be argued that there are further grounds for this distinction in that common clinical parlance has often

tended to identify the term 'parasuicide' with an inferred manipulative intent on the part of the individual. As such the term has become slightly more pejorative than the broader term 'suicidal behaviour'.

1-3 Methodological Difficulties in Determining Suicide Rates.

In reality the investigation of the epidemiology of suicide is dependent upon the collation, analysis, and interpretation of mortality figures compiled by others (Farmer, 1988). How a death becomes classified as suicide is a variable process, which in the first place rests on a definition. As Farmer (1988) observed each of us has an idea of what suicide means, but a satisfactory definition has not been arrived at. Furthermore, he concluded that due to this difficulty, and the differences between legal systems, that direct comparison of recorded suicide rates between countries and across time within countries is naive. At the very least age, sex and method-specific rates need to be used.

Suicide data is potentially confounded by three effects: age, period and cohort (Wasserman, 1987). Cross-sectional research is particularly vulnerable to these confounds. Decreased social and economic opportunity, poor health, and/or loss of spouse in old age may provide age effects on suicide rates. Historical differences in social or physical nurturance during childhood and adolescence, genetic differences between cohorts, and/or differences in the size or structure of cohorts, are examples of likely cohort effects. Easterlin (1978, 1980) hypothesised that numerically bigger cohorts will have higher rates of suicide. There is some evidence to support this idea (e.g., Holinger, Offer & Zola, 1988). At least three cohort size theories have been advanced which account for rates of social problems by cohort size. The relative deprivation hypothesis proposes there is increased competition for employment etc, and less availability of treatment services, producing greater suicide risk. The social contagion model suggests that larger cohorts are more able to develop 'subcultures' which are insulated from the influence of other generations, for example older ones. Also a social control theory which hypothesises that the conventional socialization measures such as school, police and family are unable to control a larger cohort (Holinger et al., 1988). A corollary to this prediction that bigger cohorts will have higher suicide

rates is that, given the current "greying" of the Western World, suicide rates in the elderly should increase in the future. Changing measurement techniques such as classification methods, and/or changes which affect all age groups simultaneously such as wars or economic recessions are examples of period effects on suicide rates.

In discussing changes, trends and differences in suicide rates these possibly confounding variables need to be remembered. For example, the rates in 1982/3 for Australia and New Zealand were 11.0 and 10.8 per 100,000 respectively (Antoniadis, 1988). This does not necessarily mean that suicide was more prevalent in Australia during that period. Careful scrutiny of at least all the variables mentioned above would need to be made before such a definitive comment could be made.

A recent study conducted in England and Wales has demonstrated that changes in classification of deaths can produce real effects on the apparent suicide rates. McClure (1986) examined suicide statistics for 15 to 19 year-olds between 1950 and 1984. He took into account recent changes in "undetermined" and "accidental" deaths due to causes comparable to suicide, and concluded that the observed increase in suicide rates for males was due to a *real* increase, and not merely a change of classification. However, an apparent decrease in rates for females he concluded, may be due to an increase in female deaths assigned to the undetermined or accidental categories. Therefore, rather than decreasing, the true suicide rate for females in this age group may merely have levelled off.

1-4 *Suicide Rates across Age.*

There has been a marked increase in suicide attempts and deaths in adolescents and young adults (Klerman, 1987) especially over the last two to three decades. This increase has been paralleled by a cohort effect, namely an increase in depression among adolescents and young adults (Klerman, 1988). That is, current evidence points to both an increase in the rate of depression and an earlier age of onset. Surtees and Duffy (1989) conducted an age-period-cohort analysis on suicides for England and Wales, 1946-1985. They observed that suicide risk increased with age for males until they were in their mid-50's. Suicide risk

declined for the oldest cohort, but had increased over four-fold for some later-born cohorts. This type of approach using powerful statistical tools provides confirmation of what has been perceived as a changing clinical epidemiology of suicide, especially since 1970.

For children there is less evidence available in the literature. Suicide before the age of 14 is very rare. McClure (1984) reported an increase in the rate for 10 to 14 year-olds in England and Wales between the 1940's and 1970's. This has resulted in both sexes now having similar rates (McClure, 1988).

Barracough (1988) undertook an investigation of the international variation in the suicide rate of 15 to 24 year olds based on World Health Organisation statistics. With the commendable proviso that the official suicide rate is almost certainly an underestimate of the true rate, and that this underestimation probably *varies* between countries, the substantive findings were as follows. First, while the rate of female suicide has been consistently lower than that for males in European countries for over a century, this relative protection for women is not found in some Asian and Latin American Countries. For example, females aged 15 to 24, in Cuba have over twice the risk of suicide of young men. Second, by making a kind of international measure from the average of 24 countries, Barracough concluded that there was a period of increasing suicide risk for the young in the mid and late 1970's which is now subsiding. The mean rate for males however, remains substantially higher than at 1970.

In New Zealand the largest increases in suicide rates during the 1960's and 1970's were seen in the 15 to 19 year age group, followed by the 20 to 24 year olds. Antoniadis (1988) used National Health Statistics Centre data to conclude that from 1961/65 to 1975/80 the rates changed as follows: 15 - 19 year olds increased 304% for males and 223% for females; 20 - 24 year olds increased 132% for males and 10% for females.

Figures 1, 2, 3 and 4 show the New Zealand suicide rates per 100,000 for the two age groups 15 to 19 years, and 20-24 years, for the period 1973 through 1986 (Data supplied by National Health Statistics Centre, 1989, personal communication).

Figure 1. Suicide rates

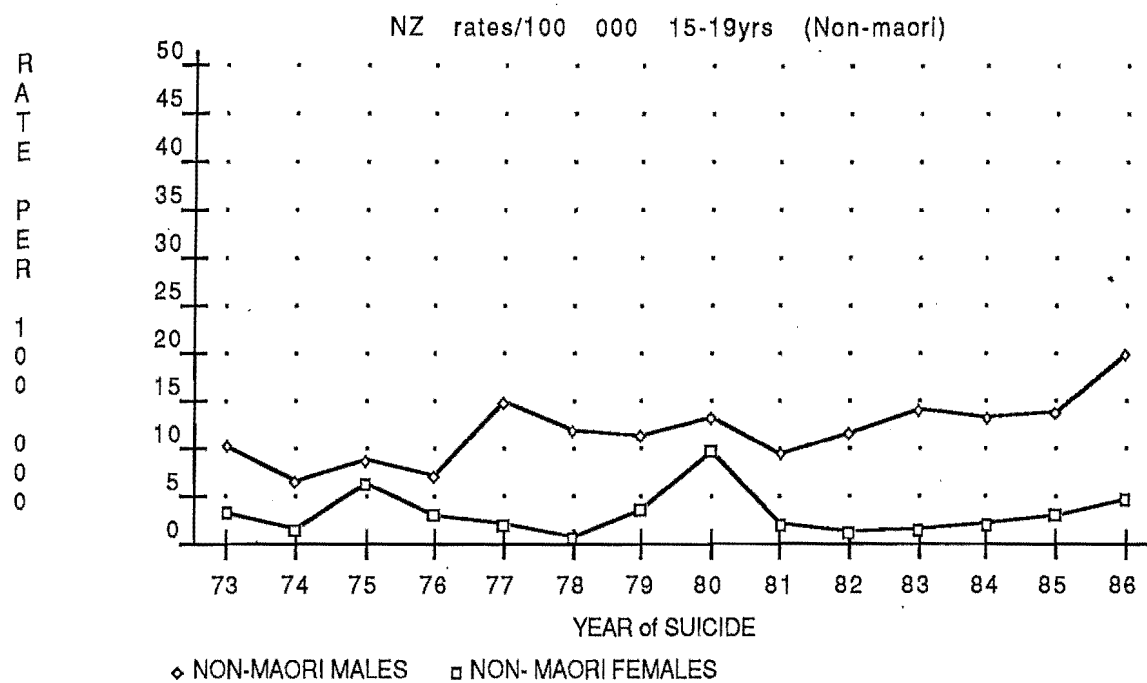


Figure 2. Suicide rates

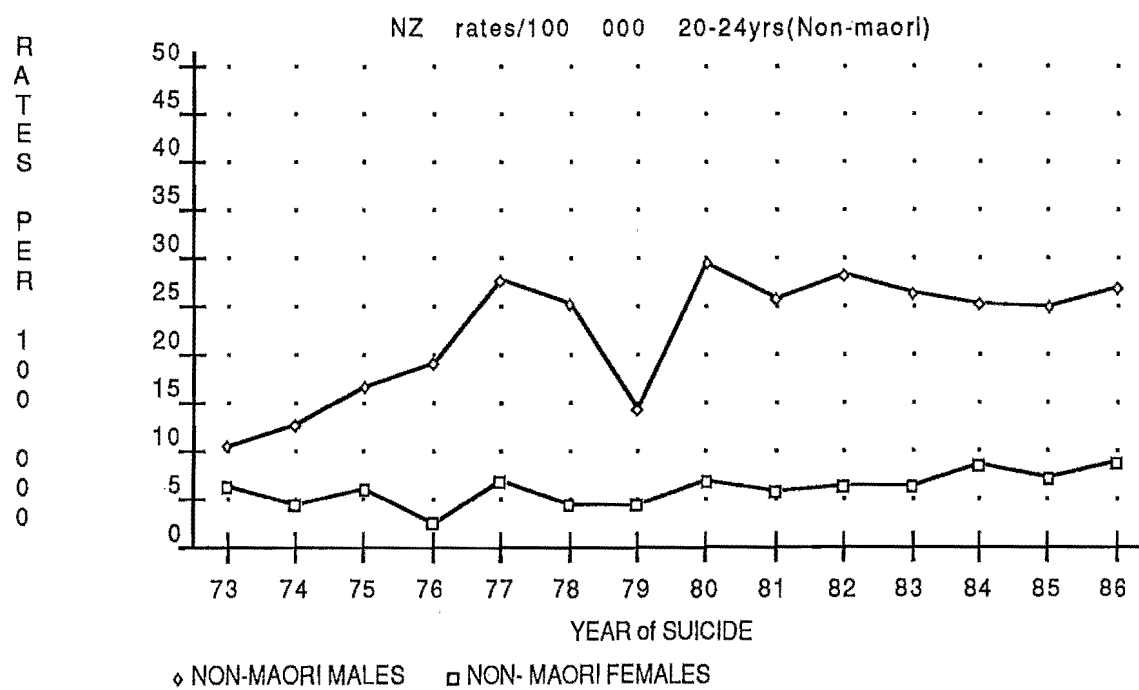


Figure 3. Suicide rates

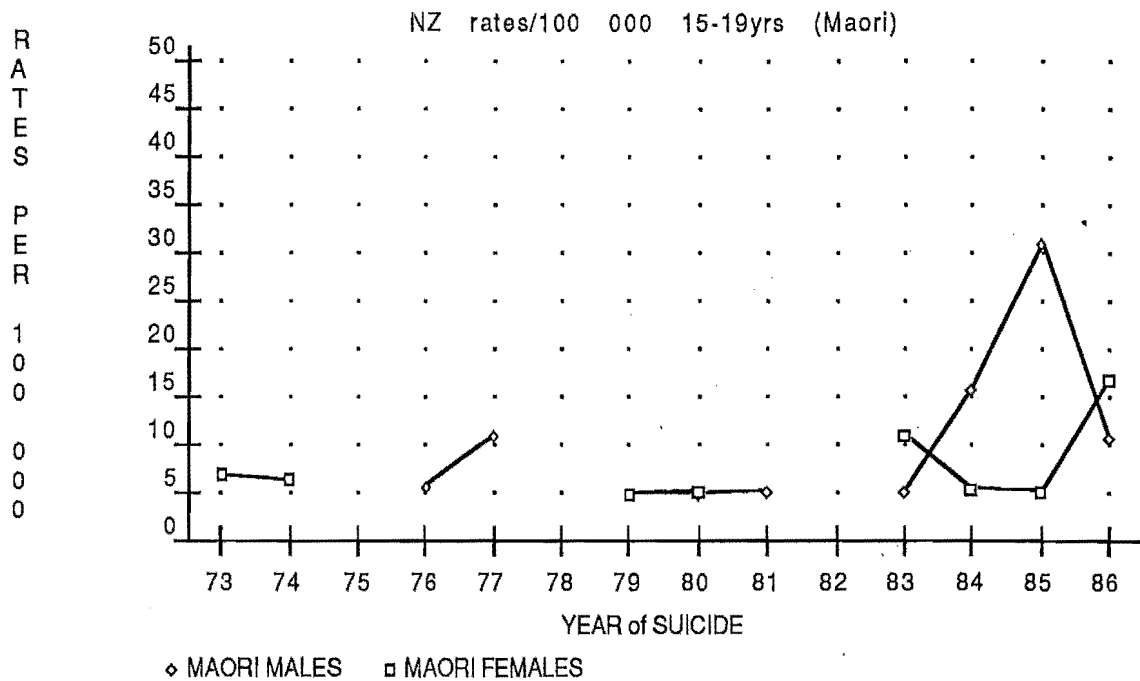
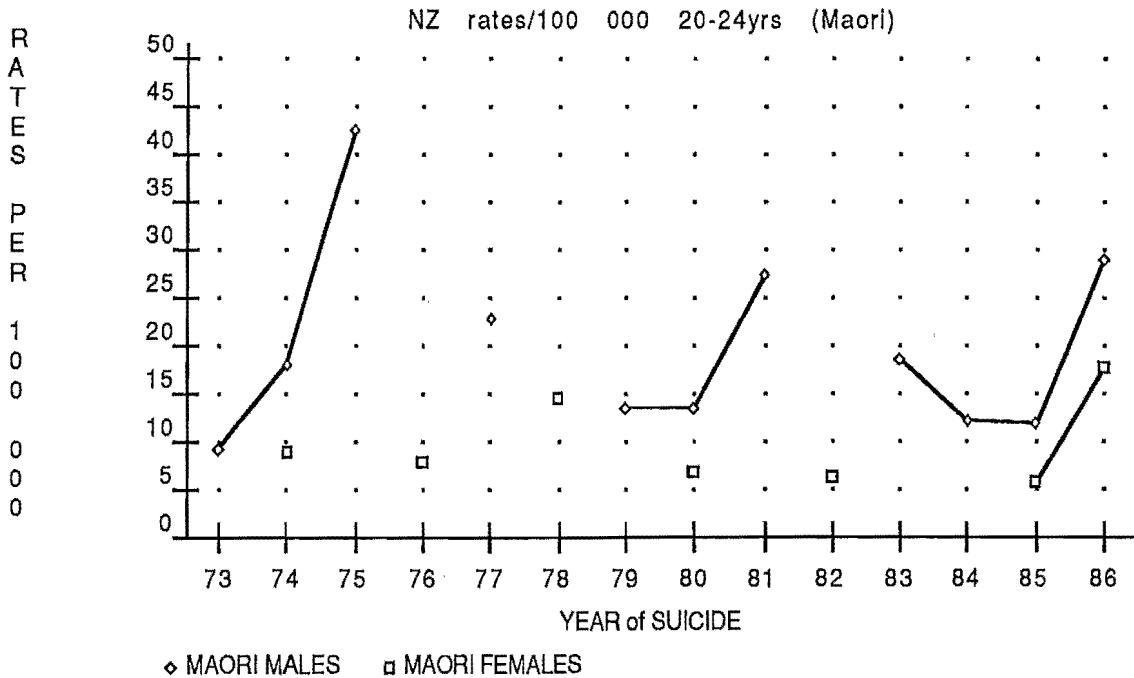


Figure 4. Suicide rates



For non-Maori 15 to 19 year olds, the rate appears to be continuing to increase. Any increase for females is not very apparent. 20 to 24 year old non-Maori males by contrast, had a rapid increase in suicide rate during the late 1970's which now appears to have levelled off to a plateau. Unlike Barraclough's (1988)

'international' trend discussed above, there does not appear to have been a significant *decline* in rate as of yet. The 20 to 24 year old non-Maori females appear to have had a very slight, yet consistent rise in suicide rate over the period. For Maori in these age groups trends are not easily discernible due to the very small database.

Despite the interpretation of these trends being open to the problems discussed above, they represent the best epidemiological evidence currently available in New Zealand, and are suggestive of the expected trends as observed in other countries. Sophisticated epidemiological research in New Zealand would be very welcome, especially for example to illuminate any possible differences between non-Maori and Maori. A robust finding in the U.S. has been the significantly lower rate of suicide in nonwhites compared to whites (Klerman, 1987). Lester (1989) also reported a significantly higher rate for whites than nonwhites in South Africa.

1-5 Researching the Epidemiology of Attempted Suicide and Suicidal Behaviours.

It has long been noted that attempted suicides outnumber completed suicides. Also, that the general finding that more males complete suicide than females is reversed, such that more females tend to attempt suicide than males (Klerman, 1987). A pertinent question is how does attempted suicide, and other less serious suicidal behaviour such as ideation, relate to suicide itself? Suicide is fatal according to most definitions, which makes it a behaviour that is defined not only by motive and action, but also by outcome. Farmer (1988) pointed out that if we study for example, accidents entirely from the perspective of fatalities (ie, outcome), then we would have a highly distorted picture of accidents. Are we then justified in separating suicide from attempted suicide in order to study either? Stengel (1952) summarized data which showed that the *characteristics* of suicide completers were different from those of suicide attempters. As Klerman (1987) noted, this distinction has since become a major principle, both of epidemiologic studies, and clinical management of patients. These characteristics are summarized in Table 1 (page 14). Risk factors are not in themselves predictors,

but are the association between some characteristic or attribute of an individual or group or environment, and an increased chance of the occurrence of a particular disorder, disease, or related phenomenon. As such risk factors are statistical concepts (Klerman, 1987). It is to be noted that risk factors differ from predictors in that they are not necessarily specific to suicidal behaviour. For example, recent life events may increase the likelihood of a variety of behaviours, amongst which could be a suicide attempt. However, this differs from cognitive events such as suicidal ideation, which is much more likely to predict the development of suicidal behaviour. Thus, a risk factor may predispose an individual to engage in a behaviour, whereas a predictor implies considerably greater probability that a specific behaviour will be emitted. Furthermore, predictors may be necessary antecedents before such behaviours can occur.

Farmer (1988) pointed out that many of the apparent differences in the epidemiology (as in the above table) can be explained in terms of method preference and lethality. It is possible for there to be a continuum between suicide and 'failed', or attempted suicide. The following quote (with its wry terminological twist) nicely summarises Farmer's arguments:

"There is no doubt that, in common with many other phenomena, there are a large number of causes, but fundamentally there has to be the right combination of circumstances and state of mind for a fatality to occur. Chance may not produce all at the same time; the fact that it does not, does not mean that we should continue to work on a dichotomous model. It is worth recalling the account that Jerry Lewis gave of himself after a suicide attempt; he put the muzzle of the revolver into his mouth and was feeling for the trigger when "Thank God I heard my children laughing and running through the hall. That snapped me out of it. The suicide impulse lasted only a moment - but that's all it takes". One wonders how many American parasuicides there are in heaven and how many failed suicides there are in England."

[Source: Farmer RDT (1988) Assessing the Epidemiology of Suicide and Parasuicide. *British Journal of Psychiatry*, 153, p.20]

Table 1. Characteristics of suicide attempters and suicide completers.

(1) Suicide Attempt Risk Factors: Adolescents and Youths less than 30 years of age.

- *Females are frequently observed to make more attempts than males
- *Recent life events especially involving some frustration in a personal relationship
- *Impulsivity is often present
- *Low lethality of method (in contrast to possibly high lethality methods for completed suicides)
- *Previous suicide attempts

(2) Suicide Death Risk Factors: Adolescents and Youths less than 30 years of age.

- *Males more than females
- *Whites more than nonwhites (in the U.S.)
- *Depression and affective disorder likely to be present
- *Substance abuse also likely to be present
- *Previous suicide attempts
- *Epidemic clustering (social contagion) may occur
- *Family history of suicide

(3) Suicide Death Risk Factors: Adults aged 30 years and over

- *Family history of suicide
- *Males more than females
- *Psychiatric diagnosis likely to be present
- *Marital status (the evidence strongly suggests marriage is a protective factor for both men and women against suicide)
- *Lack of social supports
- *Medical illness may be present
- *Unemployment
- *Fall in social and/or economic status
- *Inadequate treatment
- *Previous suicide attempts

(Source: Klerman, 1987, p. 34-37).

How common is attempted suicide, and other suicidal behaviours such as ideation or plans? The problems which face the investigator of suicidal behaviours other than completed suicide, are different from those faced when researching the epidemiology of completed suicide. Hawton (1986) concluded the two major problems are definition, and case identification. Definitions of suicidal behaviours were discussed above. Post hoc identification of suicidal behaviour needs to be made with care. Explanations for a given behaviour may not be the same as the reasons for it. A pertinent example the author came across in conducting this study was a bulimic individual who presented for a gastric lavage post-binge, while claiming to have taken an overdose as a suicide attempt.

1-6 Epidemiology of Attempted Suicide and Suicidal Behaviours.

There have been two recent studies of the frequency of suicidal behaviours in children, that is aged below 16 years. Kienhorst et al., (1987) surveyed children aged 5 to 14 years in the Netherlands and estimated non-fatal attempts to occur at the rate of 4.6 per 100,000. However, in the 10 to 14 year subgroup the prevalence rose to 8 per hundred thousand. These authors concluded that suicide attempts are a minor problem for children 5 to 14 years, hardly ever occurring before age 11. Joffe, Offord & Boyle (1988) analysed data from the Ontario Child Health Study, a cross-sectional community survey. They reported on 3,294 children aged 12 to 16 years. Approximately 5 to 10% of boys and 10 to 20% of girls reported suicidal ideation or attempts within the previous six months.

Two recent studies have focused on the prevalence of suicidal behaviours in school-age adolescents. Smith & Crawford (1986) surveyed 313 high school students in Kansas, with an average age of 16.5 years (range and/or standard deviation was not specified). They concluded that suicide is a personal concern for most high school students. 62.6% of the students reported some degree of suicidal ideation or action. This included 8.4% who had made an attempt. The frequently cited ratio of 50 attempts to each suicidal death (Jacobnizer, 1960) does appear to be an underestimate. Friedman, Asnis, Boeck & Di Fiore (1987) surveyed 385 high school students in New York (mean age = 16.04, s.d. = 1.2). Their results are remarkably consistent with those of Smith & Crawford (1986).

60% reported previous suicidal ideation or action. 8.7% of these had tried to kill themselves at least once. Furthermore, they noted that less than half the attempters reached the attention of mental health professionals.

Four recent studies of attempted suicide in more general populations (that is not just youths) are worth noting. First, Odejide, Williams, Oheri & Iknesan (1986) studied the epidemiology of what they termed deliberate self-harm in Ibadan, Nigeria. Of interest is their finding that males outnumbered females in a ratio of 1.4 to 1, a reversal of the general results in white, Western-style cultures. In contrast to Odejide et al., (1986) a recent study of suicide attempts in Saudi Arabia confirmed it to be predominantly a young female activity (Daradkeh & Al-Zayer, 1988). These researchers concluded that the relatively low rate (20.7 per 100,000) was approximately equal to that of Jordan. Mahy (1987) reported that suicide attempters in Barbados are predominantly women in late adolescence and early adulthood. Furthermore, between 1974 and 1984 a nearly 10% annual increase in suicide attempts, compared to a 0.5% annual population increase, was observed. The fourth study observed trends in suicide attempts between 1976 and 1980 in Denmark. The incidence of suicide attempts rose rapidly from 1976 through 1979, with a 48% rise. However, 1980 saw a small decrease of 13% (Bille-Brahe & Juel-Nielsen, 1986). The researchers noted that more men were attempting suicide, thereby increasing the rates. In fact over the five years of study the sex ratio changed from 1.5 females per male attempter, to 1.2 *males per female* attempter. Thus in Denmark it appears there is a new phenomenon emerging of more male than female suicide attempters, similar to the situation in Nigeria as previously mentioned.

1-7 Historical Views on Suicide.

The phenomenon of suicide is enormously complex. Clearly there are a great number of very different routes that individuals traverse before arriving at the expression of behaviour we term 'committing suicide'. Accounts for, and understanding of suicide have been made over a broad spectrum of paradigms at different periods in history. Self-destruction has been considered a moral-[^] religious problem, a philosophical dilemma, an organic disease entity, and more recently as a psycho-social event.

The ancient Greeks regarded suicide as both an admirable and harmful act. The Epicureans were generally regarded as against suicide; but the Cynics placed few restrictions on the right to commit suicide. Stoic view of suicide justified it as a rational act, providing the timing and reason were right. Acceptable Stoic reasons included, for the sake of friends, on behalf of one's country, and when suffering intolerable pain, mutilation or incurable disease. The early Christian years led many to suicide in the cause of martyrdom. The church reaction was to condemn suicide as an act of sin associated with crime - the notion of "self-murder". This negative reaction can be traced from St. Augustine's writings in the fifth century (Antoniadis, 1988).

In 1646 John Donne's work *Biathanatos* (completed in 1607) was published by his son. It promoted the radical thesis (for the times) that killing oneself was not necessarily a natural sin. Religious arguments have continued since. In 1958 the Church of England National Assembly Board of Social Responsibility published a report entitled *Ought Suicide To Be A Crime?* Its answer was *no*. (Porterfield, 1968).

Without doubt the various religious doctrines and philosophical currents have influenced the contemporary ethos of suicide. The contemporary view of suicide is one of a public health issue. The existence of diagnostic categories in the World Health Organization's International Classification of Diseases (Ninth Revision), ICD-9, for overdose (950.9), and suicide attempt (958.9) suggest that suicide is currently well included within the bounds of medicine and public health.

Sigmund Freud and Emile Durkheim were the two theorists who may be said to have been primarily responsible for the introduction of suicide into the social sciences, and it is to them both that we can attribute the generation of a

broad social science paradigm within which psychological and sociological theories have been able to develop. However, this paradigm has not yet dictated a uniform conceptual approach to suicide. Durkheim's *Le Suicide* (1897/1951) took an anti-reductionist approach, concentrating on factors *external* to the individual. Those factors stressed included societal structure and events. Freud fathered the psychodynamic explanations of suicide, emphasising the etiological significance of phenomena *internal* to the individual such as biological drives and dynamic motivations for self-destruction. Whilst Freud and Durkheim had different foci then they did generate the broad social science paradigm within which the psychological and sociological theories have developed. This has led to two primary dimensions of interest to modern suicidologists. They are closely related and overlapping to some extent, and can be conceptualised as continuous:

(1) The Interpersonal-intrapersonal continuum:

This relates to the locus of action for suicidal behaviour. At one pole are formulations which emphasize purely intrapersonal factors in the etiology of suicide. At the other end are approaches which stress interpersonal factors. Conceptualisations lying along this continuum are characteristic of the discipline of psychology.

(2) Individual-Social system continuum:

This second dimension is related to the first and addresses the concept of context or ecology for the individual; the interplay between the individual and his or her social environment. That is, does one study the individual, the social environment, or both? An example would be Durkheim's proposal for anomic suicide emphasises the strength or weaknesses of a person's relationships or ties to society. In one sense this continuum throws up the issue of "ownership" of the problems of a suicidal individual. Do problems belong to the individual, or to the society in which he or she lives, or both? Conceptualisations lying along this continuum are perhaps more characteristic of the discipline of sociology.

The family can be seen to be an important aspect of the overlap between the two proposed etiological dimensions of suicidal behaviour. Within - individual perspectives spotlight the family with an emphasis on developmental processes and how they may interact with the production of suicidal inclinations in an individual. And between - individual formulations propose disrupted family life is a prime determinant of suicidal behaviour. It is not surprising therefore to find both psychologists and sociologists focusing on the family when researching

suicide and related phenomena.

1-8 Etiological Theories of the Development of Suicidal Behaviours.

From the interest in the interplay between these two dimensions, which loosely represent the psychological and the social, many theories have been constructed about the etiology of suicide. None is yet sufficiently comprehensive and extensive to account for the phenomenon (Taylor & Cummings, 1985). Edwin Shneidman (1986) suggested there are at least fifteen conceptualizations of suicide, (a) literary and personal document; (b) philosophical and theological; (c) demographic; (d) sociocultural; (e) sociological; (f) dyadic and familial; (g) psychodynamic; (h) psychological; (i) psychiatric or mental illness; (j) constitutional and genetic; (k) biological and biochemical; (l) legal and ethical; (m) preventional; (n) systems theory; and (o) political or supernatural.

Taking a broader-brush approach it is convenient to group the theories into biological (including biomedical), cultural, psychological and social (Davison & Neale, 1982). Within these categories will be found most if not all of those referred to by Shneidman.

1-9 Biological Theories of the Development of Suicidal Behaviour.

Biological theories of suicide are predicated on the belief that there are certain biological processes, which may or may not be influenced by constitutional or genetic factors, and that these in some way predispose or determine behaviour. Roy (1986) pointed out that suicide (also according to him like so much else in psychiatry) tends to run in families. Adoption studies strongly suggest there may be a genetic factor for suicide independent of, or additive to, the genetic transmission of psychiatric disorder, according to Roy. However, it is entirely unclear whether a family member may in some way serve as a role model, and that this accounts for suicide running in families. Perhaps the best evidence so far available for a genetic or inherited factor is to be found in the racial differences in

suicide frequency that transcend national boundaries and separation in historical time and geography. The most obvious example is the low rate found among both African and American blacks (de Catanzaro, 1981). It may be that cultural factors are responsible, having persisted by tradition, or that genetic features are involved. More research is required. At the present time there is no final consensus on the types of genetic mechanisms that operate in affective illness (Mendlewicz, 1988), let alone a putative mechanism for the transmission of suicidal behaviour. One possible candidate for a genetic factor is the "inability to control impulsive behaviour." (Kety 1986). This especially relates to hypotheses surrounding serotonergic functioning which is discussed below.

A biochemical research approach to the development of suicidal behaviour has developed as an offshoot of biological depression research. As such the major research foci are similar, namely monoamines and hormones. Herman van Praag (1986) presented a comprehensive review of biological suicide research. He noted serious methodological flaws in much research, including a tendency to equate suicidal acts with an aggression disorder, and a failure to distinguish between suicidal acts especially with respect to *intent*. This is a particularly serious flaw in that such research fails to distinguish real intentional suicidal behaviours from those that may look like intentional suicidal behaviours from the outside. Van Praag (1986) concluded that the evidence for a relationship between low levels of 5-hydroxyindoleacetic acid (5-HIAA, which is a metabolite of serotonin, 5-HT) in the cerebrospinal fluid (CSF), and suicidal behaviour is quite impressive. Furthermore, it appears likely according to van Praag that disturbed impulse control is the psychological correlate of lowered central nervous system metabolism of 5-HT, rather than disturbed aggression regulation. If this is so, then an expected corollary would be the finding of similar 5-HT disturbances in disorders such as drug and alcohol abuse, gambling, sex offences and the eating disorder bulimia. Research is needed to investigate this. There is however, evidence of serotonergic involvement in affective disorders (McNeal & Cimboric, 1986). Fluoxetine, a highly selective Serotonin reuptake inhibitor, has demonstrable antidepressant qualities (Schmidt, Fuller & Wong, 1988). It may be that a subgroup of depressives with a particular monoamine depletion, namely 5-HT, are more vulnerable to develop suicidal behaviours. If this is the case, and it were to be independent of the ability to control impulsive behaviour, then it has yet to be demonstrated. In the meantime clinical prediction of suicidal behaviours

by taking monoamine levels is unrealistic. Furthermore it is argued that expecting a single neurotransmitter system to be responsible for the development of a behaviour as complex as suicide (with all its demonstrated determinants as will be further reviewed below), is too simplistic.

The possible involvement of the hormone cortisol has also been investigated, so far with inconclusive results (van Praag, 1986). As McNeal and Cimboic (1986) pointed out knowledge of the lack of normal cortisol secretion in some depressed patients has led to the development of the dexamethasone suppression test (DST). Unfortunately there is evidence that DST results may be influenced by various nonspecific stressors (Schmidtke et al., 1989). The same authors reported a study in which no relationship between DST results and acute suicide attempts was found. Therefore the utility of this procedure for clinical prediction of suicidal behaviour is low.

1-10 *Cultural Theories of the Development of Suicidal Behaviour.*

Because cultural aspects appear to play a part in the settings, methods and "rationales" for suicidal acts, theoretical positions have been established which propose etiological importance for these cultural factors. Suicide occurs in all cultures and may attract different judgements of appropriateness depending on the rules and mores of communities. There are at least four sectors of interest in suicidology, which can be described as falling under the cultural umbrella (Shneidman, 1986). The first is literature of cultures. This may include diaries of individuals who wrestled with suicidal ideation over a number of years, recording it all before finally completing the act. Or it may involve a study of, for example, dramatic literature. Lester (1972, in Retterstol 1975) surveyed the plays of the best known modern Norwegian writer, Henrik Ibsen. Seven suicidal deaths were described. This type of research can provide valuable insights into probable cultural modulators of suicidal behaviours. In a book beautifully, but germanely, titled the *The Thorn in the Chrysanthemum* Mamoru Iga (1986) related suicide to economic success in modern Japan. The book is a valuable insight into cultural aspects of suicide quite different from those of the West. As Iga pointed out, the suicide rate of Japanese writers is very high. One individual

of particular interest (perhaps because his tetralogy has been translated into English) is Yukio Mishima who became a Nobel Prize candidate in 1968. Two years later he committed *seppuku*, which is a traditional Samurai ritual self-disembowelment. Mishima's profound interest in suicide is reflected in his 26 published "suicide" novels or stories, topping the list of fellow writers for his interest in writing about suicide (Iga, 1986). Whilst this may merely represent a personal obsession with the topic of suicide on the part of Mishima, taken in the context of general interest in the same topic by many other Japanese writers and a very high suicide rate among authors compared to the general population, it more likely represents some aspect of the culture in which the literature occurs. Of course literature can be both influenced by the culture in which it is embedded, and also have a effect on that culture if it is sufficiently prominent and well regarded (as Mishima's writing was and is). The study of literature in a culture may therefore be a way of getting to understand what makes the "national psyche" tick, and thereby enhance our understanding of a particular behaviour such as suicide.

Some researchers have even gone so far as to suggest that the poetry of adolescents in despair may provide early signs of suicidal behaviour, thereby facilitating intervention. For example, Sharlin and Shenhar (1986) compared the poetry of suicidal and nonsuicidal adolescents by classifying the words used into semantic fields. They observed significant differences in both the 'vigour' and 'intensity' of the words loaded onto two major foci which they termed Death and Bad Situation. The suicidal adolescents used significantly more of the loaded words than did the controls. However, these results were based on a very small database (only four subjects). They do serve to remind clinicians though of the necessity to take seriously any suicidal indications that may be manifested in an individuals use of language (Ross & Lee, undated). It remains to be seen whether creative output from individuals, in any other domain besides the linguistic can be reliably classified for clinical use.

The second area in which culture has been proposed to contribute to the development of suicidal behaviour is in the philosophy and theology which prevails in that culture. As hinted at above, philosophical and theological approaches have changed over historical time periods. Contemporary Western attitudes to suicide are highly influenced by Christian doctrine, therefore tending to consider it as a sin, an illness. or even a crime. In this increasingly secular age,

though, such views are coming under growing scrutiny with debates such as the one surrounding euthanasia.

Some cultures contain contradictions about suicide, sanctioning it in some parts and condemning it in others (Farberow, 1975). For example Brahmanism institutionalized and sanctioned the practice of ceremonial sacrifice of widows, known as suttee. In contrast other cultures have more consistent attitudes. Mohammedism has always condemned suicidal behaviour severely. Jewish law was punitive towards suicide. It is clear that such philosophical and theological arguments have provided the underpinnings of legal and ethical approaches to suicide. These cultural opinions regarding suicide have implicit power over etiological hypotheses due to their embedded *values*. Societies which have philosophical and/or religious grounds for condemning or sanctioning practices such as self-destruction do influence individuals through these values. It is in this manner that the concept of a social taboo regarding suicide has arisen. Whilst philosophical and theological understanding may not therefore directly enhance our knowledge of how suicidal behaviour develops in the individual, it may be fundamentally useful in explaining those cultural restraints which exist. And, those restraints (perhaps in the form of a social taboo) may in fact be important primary preventive influences. Research into existential belief systems, especially across cultures, would be very useful to estimate the importance of such taboos. Enhancement of taboos may be an important preventive measure (Shaffer, Garland, Gould, Fisher & Trautman, 1988).

A third way in which culture has been proposed to contribute to the development, or not, of suicidal behaviour is in legal and ethical approaches. Besides suicidal behaviour being seen as wrong for philosophical and/or theological reasons there have been various ethical arguments advanced. For example, that it harms one's family, deprives society of an individual's labour, and encourages lawlessness (Battin, 1982). The argument with respect to deprivation toward the community can be found incorporated into English law by medieval times, and expressed in the metaphorical notion of 'injury to the King.' The judge deciding the case *Hales v. Petit* (1537 - 38) remarked that suicide is an offense against the King in that hereby he has 'lost a subject, and he being the head has lost one of his mystical members.' (Battin, 1982).

Laws and social taboos then, were the first preventive measures established. Some of these were explicitly savage in modern terms. For example the practice

of driving a stake through the heart of the corpse after suicide. The eighteenth century case of Kitty Jay, who hanged herself, is informative. A coroner's jury was asked to deliberate on her sanity, not the possibility of foul play. For, if she were insane then she could be buried in the churchyard, whereas if she were judged to be sane at the time then she would be considered to have committed a crime against the king and the church and could not be therefore be buried in sacred ground. As it happens she was judged sane at the time she hanged herself and was therefore buried at the crossroads *where every beggar's foot might pass over her grave* (Shneidman, 1976). Such public and supposedly eternal punishment was assumed to be a deterrent to others who might also consider suicide.

The fourth, and last, area of interest to suicidology with respect to culture is to study suicidal behaviour in different cultures, along with the rates and types of its manifestations. By this process it is hoped to further elucidate not only the development of suicidal behaviour in general, but also any culture-specific mechanisms which might exist. Etiological processes may vary across cultures, with implications for preventive measures, both primary and secondary. Suicide is strongly influenced in form, meaning, and frequency by the culture in which it occurs (Reynolds, Kalish & Farberow, 1975). Whilst the often large epidemiological differences which occur between cultural groups can be partly explained by classification differences, it is apparent that some real differences exist. An often used example of classification issues is the assumption that, in nations which are predominantly Roman Catholic and who therefore suffer strict religious taboos such as Ireland, coroners are less likely to return a verdict of suicide. Low rates tend to be associated with Roman Catholic and Arab influences (Barracough, 1988), although an exception such as Hungary underscores the danger of oversimplifying such generalizations. One real difference in suicide rates which occurs is the stable finding that whites have a higher suicide rate than nonwhites (Klerman, 1987). As noted above this could be due either to inherited factors or cultural ones, such as taboos. Also there are large differences in rates for adolescents between various Indian tribes (Berlin, 1987). And, unlike the familiar pattern for Europe and much of the Western world, in some Latin American and Asian countries (for example Brazil, Dominican Republic, Hong Kong, Philippines, Thailand, Paraguay, and Cuba) the suicide rate is greater for females than it is for males (Barracough, 1988).

The methodological obstacles in cross-cultural research of suicidal behaviour are difficult to overcome. In order to be certain that a factor in the development of suicidal behaviours is due to the influence of culture we must be sure that no other factor(s) is involved. In order to achieve this we really need to be fairly certain of the major determinants of suicidal behaviours, and their interrelationships within a culture. Direct comparison of rates is tenuous, due to the uncertainty in classification. Cross-cultural comparison of precipitating factors such as psychiatric disorders is not necessarily straightforward either. Bhatia, Khan, Mediratta & Sharma (1987) reported that, in comparison to the United States, suicide in India was rarely attributed to psychiatric causes. They proposed this was due to classification difficulties, made worse by limited resources. Chiles, Strosahl, Ping, Michael, Hall, Jemelka, et al., (1989) reported that the relationship between depression, hopelessness, and suicidal intent may be quite different for Chinese and American patients. Of course it could be that there is no universality of a structural relationship between those variables. However, it may also be that there is no consistency of structural relationship between these variables (or others) within a culture, such as America or China. Therefore attributing causality of differences to culture may be entirely spurious.

Looking at the issue from the other side of course, it may be argued that noting differences in suicidal behaviours across cultures could help us to find the very determinants of such behaviour that we seek. This approach has merit so long as comparisons can be made between data collected with comparable measures. As we have seen the classification issue makes this difficult. Furthermore the possibility of age, period and cohort effects as discussed above also need to be remembered. Comparing a sample of predominantly teenagers from one country with a sample of predominantly mid-aged adults from another country is unlikely to yield any valid information. Also a researcher needs to be wary of comparing cultures that may have experienced quite different histories and recent life experiences. For example, comparing one country that has experienced political turmoil and war for the last decade or two with a country that has had a peaceful existence for a century may not be valid either.

As far as clinical prediction of suicidal behaviour, or assessment of risk, is concerned the cross-cultural literature does not have much to offer at present. However, the evidence which is available (as noted above) serves to remind clinicians that cultural factors do play a role in determining the development of

suicidal behaviour. And, therefore should be taken into account wherever possible. The possibility of subcultural, or cult-follower influence in suicidal behaviours was dramatically demonstrated by the events at Jonestown in Guyana. Influence by subcultures smaller or larger in number is entirely conceivable. Risk assessments would appear to be well-advised to bear this in mind.

1-11 Social Theories of the Development of Suicidal Behaviour.

Social groups provide a network of support for the individual. Therefore describing or measuring the parameters of the social groups in which suicidal individuals live, or have lived, can also provide potentially interesting and useful information. The demographic approach to suicide relates to various statistics and is predicated on the assumption that various characteristics of the society in which an individual lives contribute to the development of suicidal behaviours. Demographic considerations may not contribute much to our knowledge about causality of behaviour. For example, the question "is he depressed because he's poor, or is he poor because he's depressed?" is not easily answered by reference to demographic variables alone. However, demographic variables are relatively easily, and cheaply gathered and analysed.

The most recent study of suicide demography in New Zealand is that of Antoniadis (1988). This was based on a search of the 1981 coroner's files. Taylor & Cummings (1985) had previously reported on the 1980 cohort of suicides in New Zealand. A major strength of the Antoniadis study is that many of the statistics have been converted into *rates*, by reference to New Zealand Census information. This makes the comparison across groups and categories possible. Unfortunately Taylor & Cummings generally did not convert their findings to rates. One immediate impact of this is the difficulty of comparing the 1980 cohort (as reported by Taylor & Cummings, 1985) with the 1981 cohort (as reported by Antoniadis, 1988).

The substantive demographic findings as reported by Antoniadis (1988) can be summarised as follows. The suicide rate continues to rise with advancing age. Separated, divorced and widowed individuals have higher suicide rates than those who are married, de facto, or single. Immigrants to New Zealand have

higher rates than those born here (13.3/ 100,000 for immigrants; 9.7/ 100,000 for New Zealand born). Hanging, carbon monoxide poisoning and firearms are the most common methods for men (26.1%, 24.9% and 22.8% respectively), whilst women most frequently used overdose, drowning and hanging (29.1%, 16.4% and 16.4% respectively). The highest rates of all were amongst sickness beneficiaries and psychiatric inpatients (271.0/ 100,000 and 208.0/ 100,000 respectively). By contrast, students and those engaged in household work (predominantly women) had the lowest rates (2.7/ 100,000 and 4.9/ 100,000 respectively). The agricultural, fishing, farming and forestry sectors of the economy showed the highest rate (18.4/ 100,000), whilst the lowest rate came from the clerical and related group (1.8/ 100,000).

Antoniadis (1988) also reported that the number of suicides was three times greater among men than women (241 males and 79 females). By contrast, Taylor & Cummings (1985) reported that in 1980 there were almost exactly *twice* the number of male suicides as female (223 males and 109 females). This point is illustrative of the caution with which we should approach demographic variables which have not been analysed with respect to age, period and/or cohort effects as discussed above. That two consecutive years can produce a 50% change in the sex ratio is indicative not only of the possible instability of demographic variables, but also of the problems that may be encountered when interpreting cross-sectional research into suicide, such as these two New Zealand studies. It can only be repeated that sophisticated analysis, especially of trends in suicidal behaviour is sorely needed in New Zealand.

An interesting extension of the demographic approach has been provided by Holinger's and Offer's (1982) prediction model of adolescent suicide based on population fluctuations. The specific variable they have reported as predictive of rates is the proportion of adolescents in the population (Holinger, et al., 1988). However, it must be pointed out that whilst some parameters of communities, such as the proportion of adolescents amongst the total population may ultimately be able to predict overall rates, this is a far cry from the problem of predicting *individual* behaviour. It is possible that such data is of little or no use, on an individual basis. Longitudinal prospective research is required to answer this issue.

Demographic data then can be most useful to organizations such as governments who are charged with planning resource allocation. It is probable

that predictions of suicidal behaviour rates will someday be relatively reliably made for populations, and sub-populations (with large numbers of members). And, that these predicted rates will be extrapolated from information that is easily and cheaply gathered, such that mental health resources may need to be allocated to specific groups suffering, for example, sustained rates of high unemployment. That is if unemployment were to be a demonstrable factor in the etiology of suicidal behaviours; there is currently equivocal evidence. For example Hawton, Fagg & Simkin (1988) found that rates of attempted suicide in the UK were 7.5 to 10.9 times higher among unemployed than employed women. Crombie (1989) however found that for Scottish women while there had been a rise in reported unemployment there had been a coincident decrease in completed suicides. Crombie noted a remarkable correlation (0.81, $p < .01$) was observed between suicide and unemployment among men. A simplistic interpretation would be that an increase in unemployment brings about a relatively immediate increase in suicide. However, on further analysis of the data on a regional rather than a national basis, Crombie found the correlation to be nonsignificant ($r = 0.10$). His conclusion was that the data did not support a rise in unemployment being a direct cause of suicide for men.

As discussed above the usefulness of demographic data to *individual* prediction has yet to be demonstrated. It can be argued that conceptually this may never happen since correlations would need to approach unity in order to be able to generalize from some factor of the general population to an individual. Therefore clinicians are more likely to be in need of enhanced understanding of the development of suicidal behaviour in individuals, and thereby be in a better position to make accurate risk assessments and crisis interventions. The major clinical value of demographic data lies in its ability to remind clinicians of the need to more closely scrutinize individuals belonging to *populations* which have higher rates, and therefore presumably higher risk of developing suicidal behaviours.

1-12 *Psychological Theories of the Development of Suicidal Behaviour.*

Psychological theories of suicide can be meaningfully divided into those

that focus on the family (both in a dyadic and/or systemic way), and those that are more individualistic in focus such as the behavioural, cognitive and phenomenological approaches.

1-13 Psychological Theories of the Development of Suicidal Behaviour-Family Approaches.

It is clear that suicide and attempted suicide are excessively rare before the age of 12. Suicide rates rise rapidly during the midteens, and continue to rise through the whole of adult life (Rutter, 1986). In contrast, attempted suicide rates peak at 15 to 19 years, with a progressive decline thereafter (Kreitman, 1977). Any explanation of suicidal behaviour needs to account for these trends, along with the rarity of pre-pubescent suicide. Families vary greatly in complexity, functioning and stability both within, and across cultures. They represent the primary ecological system within which the individual is 'nested' from the time of birth onwards. It is widely believed that the development of an identity is a psychological task of adolescence (Kendall & Williams, 1986) and that this involves a process of individuation from the family. Godwin (1986) pointed out that in the presence of a supportive family situation, teenagers usually pass through this development phase without many problems. The central tenet of family approaches to suicidal behaviour has been the concept of protective factors provided by the family to children which are then progressively lost. The question of importance then is, what familial factors may lead to loss of such protective mechanisms and therefore vulnerability to developing suicidal behaviours? The pertinence of familial factors was noted by Hawton (1986) in identifying four features that are common among children and adolescents who make suicide attempts : broken homes, family psychiatric disorder, childhood maltreatment, and family suicidal behaviour.

(i) Broken homes/family cohesion: In a useful and well-designed study Rubenstein, Heeren, Housman, Rubin & Stechler (1989) looked at the role of family cohesion as a protective factor against adolescent suicidal behaviour. They used the Family Cohesion and Family Adaptability Scales to measure family functioning. These scales tap into aspects of family functioning as perceived by the

adolescent. For example Family Cohesion contains 16 items reflecting the adolescent's perception of positive emotional involvement of members of the family, time together, consultative decision-making, and common interests and activities. Rubenstein's et al., data supported the view that family cohesion has a role as a protective factor, at least in a largely middle-class sample of primarily intact families. High school youngsters who described family life in terms of a high degree of mutual involvement, shared interests, and emotional support were 3.5 to 5.5 times less likely to be suicidal than were adolescents from less cohesive families who had the same levels of depression or life stress.

Waters & Dimock (1983) concluded there was convincing evidence that a large number of children who were subjected to parental marital separation suffered some long-term emotional distress. And, that 15 to 25% of children whose parents separate, the emotional turmoil or conflict was serious enough to warrant psychiatric treatment (of unspecified type). Aldridge & Dallos (1986) found that a variable which distinguishes the presence or absence of suicidal behaviour in families presenting to a family therapy clinic at a psychiatric day hospital, is the threat of immediate break up of the family relationship (i.e., someone is about to leave). The hypothesis that vulnerability to, and consequent engagement in suicidal behaviour, is prompted by separation in adulthood reactivating childhood separations has empirical support from a number of studies (Wasserman & Cullberg, 1989). This finding appears to be robust across cultures. Godwin (1986) reported a seven-year study of Shoshone Indians of whom 70% of completed suicides had more than one caretaker as a child, compared to 15% for controls. Further, 50% had 2 or more losses by desertion or divorce compared to the controls. In Christchurch, New Zealand, Adam, Bouckoms & Scarr (1980) found that suicide attempters had experienced significantly more parental loss in their early years than the controls. Parents of suicidal adolescents have been shown to exhibit more threats of separation and divorce. The parental marriages are perceived (quite correctly as it turns out) to be more in conflict, and families as more maladjusted (Berman & Carroll, 1984).

There is some reason to believe that a history of early object loss is more characteristic of younger suicide attempters (Greer & Gunn, 1966). Certainly a number of researchers have reported that the experience of broken homes through divorce or separation is common among young people who engage in suicidal behaviour. Withers & Kaplan (1987) found that less than one fifth of

their sample of adolescent suicide attempters came from a two-parent home. For children exhibiting self-destructive behaviours it is apparent that experience of broken homes through divorce, separation or the death of a parent is also common (Kerfoot, 1988).

Other family factors which are closely related to the 'marital' ones of divorce/separation, poor communication and conflict, and appear to be general determinants of the development of suicidal behaviour, are loss of parents and/or grandparents through death (Goldney, 1981), and being part of a reconstituted and/or adoptive family. Kerfoot (1988) found a high frequency of children engaging in deliberate self-poisoning to be from reconstituted families. In a review article, Fine (1987) found there was evidence that adjusting to step-parents, step-siblings and their extended families, plus repeated marital breakdown may be stressful to children.

Given the evidence of an association between family break-ups and the development of suicidal behaviour as discussed above, the question remains as to what possible mechanisms may account for such a link. One immediate link which springs to mind as a possibility is that of depression. Brown & Harris (1978) reported in a naturalistic study that for women at least, the rate of depression was almost three times higher for those who had experienced early object loss in the form of losing their mother before the age of eleven. It could be that the early loss predisposes the individual to depression which in turn contributes to the development of suicidal behaviour. However this hypothesis is weakened by the finding of Brown & Harris (1978) that early paternal loss, surely a far more frequent occurrence in family break-ups, did not lead to a predisposition to depression. It therefore appears that the mechanism is not so simple or necessarily direct. In an alternative formulation Orbach (1986) postulated that the threat of family dissolution and/or parental divorce may be experienced as an "insolvable problem" by children. He pointed out that merely stating that there is a relationship between parental conflicts and suicidal behaviour of the child is too generalized to foster an understanding of this relationship, whereas investigating whether the parental conflict creates an insolvable problem for the child is more conducive to understanding the phenomenon and offering a useful therapeutic plan. It could be argued that a logical corollary to this is a focus on coping strategies for such "insolvable problems". Some research into this concept of an insolvable problem, as perceived by the child, being contributory to the

development of suicidal behaviour is needed.

Lack of quality communication within a family has also been proposed as a determining factor in suicidal behaviour (Allen, 1987). Perhaps this is related to poor family cohesion. Most likely this would be in an interactive way. Poor family cohesion may have a detrimental effect on communication within the family. But also, a family which communicates poorly is less likely to develop good cohesion. Stivers (1988) found in a study of 53 families that the adolescent's Parent-Adolescent Communication Inventory score, but not the parents' (either mother's or father's), to predict the adolescent's suicidal behaviour. This suggests that poor communication, at least in one direction between parents and adolescents, may be in part contributing to suicide proneness. Further research is needed. The notion of suicidal behaviour as communication, has also been put forward (for example, Aldridge, 1984). As a hypothesis it could be suggested that suicidal behaviour is used as a communication when there is a state of poor communication, either due to a breakdown in previously adequate communication, or there being a lack of communication due to its never having been developed. One possible mechanism to bring this situation about could be as follows. Consider a family in which fairly set and rigid patterns of communication have been the norm for an individual's childhood and early adolescence. During this period the individual has learned that the parent is clearly in control of his or her destiny. During adolescence the demands placed on the individual by society to become his or her own person come into conflict with the previously functional pattern of communication within the family. Namely a pattern whereby the child had been used to the rigid patterns of behaviour which previously communicated parental control. The child or youth finds him or herself lacking the communication skills to communicate the dilemma with which he or she is now faced. The development of a dysfunctional pattern of communication, namely suicidal behaviour, becomes one possible solution to the dilemma. Research in a family systems paradigm is needed to address hypotheses like these.

Along with poor communication in families, unavailable parents have also been reported as a determinant of suicidal tendency (Grob, Klein & Eisen 1983). The level of family support as perceived by the child (measured by a factor component of the Family Environment Scale; Moos & Moos, 1981), has been shown to discriminate suicide attempters from non-attempters with an accuracy

of 88% (Asarnow & Carlson, 1988). These researchers interpreted their results as providing strong support for a link between suicide attempts in children, and perceptions of low family support. Peck (1982) reported that narcissistic parents whose "do your own thing" attitude conveys an "I come first" message may also be a determinant.

High parental expectations have also been proposed as determinants of suicidal behaviour in young people (Grob, Klein & Eisen 1983). Iga (1986) reported intense educational pressure on young Japanese, especially males. However, a study in New York state found that mothers of suicide attempters tended to have significantly *lower* educational goals for the youths than did the mothers of non-attempters (Lewis, Johnson, Cohen, Garcia & Velez, 1988). These researchers also reported that contrary to popular belief the youth's level of educational goals is not significantly associated with suicide attempts. In sum neither direct nor indirect risk of attempted suicide is conferred by high educational goals. Further research is needed to ascertain whether these relationships occur in other populations. At least two issues remain unresolved at this time. First, the effect of parental expectations may be socially and/or culturally modulated. It would be a reasonable hypothesis that parental expectations vary across social class. Parents from very poor socioeconomic backgrounds are likely to hold much lower expectations for their offspring, in general, than those from higher occupational and social status backgrounds. Cultural (or even subcultural) differences in parental expectations within one country may possibly vary quite widely. This issue may be of considerable interest in New Zealand if there is a difference in expectations between Maori, Polynesian and European-origin cultures, for example. Second, it is not clear whether parental expectations may have different effects on completed suicide rather than attempts. More research is needed, and given the possibility of culture-specific effects research in New Zealand would be useful. The likelihood that parental expectations contribute to the development of suicidal behaviours, at least in some part, remains a reasonable hypothesis. However, as one possible contributor out of many, to behaviour as complex as suicide it also seems likely that its mechanism of effect is likely to be interactive with other psychological components of the individual. For example, individuals who are perfectionist and/or rigid thinkers often hold a dichotomous view of events. These are the ones who tend to tell themselves for example that "it will be a disaster if I don't get this job, or pass this exam, etc". This may extend to the idea

that life itself is not worthwhile, unless some very difficult goal is achieved.

(ii) Family psychiatric disorder: Another family factor which possibly contributes to the etiology of suicidal behaviour may be psychiatric illness (including alcoholism) in one or more family member(s). The implication is that suicidal behaviour is at the end of a chain of causality beginning with, say, a dysfunctional parent, and ending with a psychiatrically disturbed young person. The associations between child/adolescent and parental psychiatric disorder have been of only moderate strength, with relatively weak specificity. That is, there have been only slight tendencies for children to show the *same type* of disorder as that exhibited by their parents. Moreover, the associations have not been specific to *psychiatric* conditions in parents. Child psychiatric disorder is also associated with chronic physical illness in the parents, with parental death, and with parental criminality especially when it is associated with antisocial personality disorder and/or alcoholism (Rutter, 1984).

However, Rutter found a more specific association between major depressive conditions in parents and depression in their offspring. Other studies have also produced findings that point to some type of specific association in the case of major depression (e.g. Cytryn, McKnew, Zahn-Waxler, & Gershon, 1986). It is possible that the disturbed behaviour found in children of parents with different disorders is produced by different mechanisms. When children of disturbed parents are found to differ from the children of normals, the difference has usually been attributed directly to the parental psychopathology. But psychopathology is correlated with marital discord. Emery, Weintraub & Neale (1982) investigated this possibility and concluded that whilst discord constitutes the main factor involved in the association between parental depression or personality disorder, and conduct disturbance in the children (a prominent risk factor for suicide in male youngsters; Shaffer et al., 1988), it did not account for the increased rate of disorders in the children of schizophrenics.

In terms of causal pathways Rutter (1984) pointed out that while parental mental illness constituted an important indicator of psychiatric risk for the children, the overall pattern of findings showed that in most cases the main risk did not stem from the illness itself. Rather it derived from the associated psychosocial *disturbance* in the family. Furthermore, such disturbance may continue well after the acute symptoms abate. Presumably the exception to this would occur only for those disorders with a manifestly strong genetic component

such as manic depression. It is also apparent that whilst the role of multiple risk factors is clearly relevant to the study of offspring of disturbed parents, the effects of additional risk factors may not be linear. Rutter (1979) illustrated that the combination of several stressors *potentiate* each other, resulting in greater impairment than expected from summation of simple effects for each stressor.

Werner (1984) addressed the issue of individual differences in vulnerability among children who had weathered severe stresses such as parental schizophrenia. She labelled such offspring as "invulnerables." Research strategies based on the notion of invulnerability emphasize the identification of protective factors that account for a child's development of coping competence. Werner identified (in her own longitudinal study) several potentially protective factors, including nurturance from substitute caregivers, active use of an informal network outside the family for advice and assistance, positive classroom experiences, and an acquired sense of meaning and faith about life. Some of these concepts, for example reasons for living are built into the current research, as discussed below in more detail.

(iii) Childhood maltreatment: Pfeffer et al., (1979) proposed that a disturbed upbringing may impair personality formation, and that this results in the characteristics of poor impulse control, lability of mood, and a defective sense of reality. These characteristics appear to be predispositional of suicidal behaviour, at least in some adolescents (Hawton, 1986). However, this kind of causal link remains tenuous, lacking sufficient evidence. Some theorists (e.g. Draper, 1976) have proposed a very early critical stage for the later development of suicide. Draper (1976) in proposing a 'peculiar sensitivity' at 4 to 12 months suggested that a trauma in the relationship with the mother at this time can result in the 'planted seed' for later suicide. This may be the case, but as a theory it currently fails to meet the criteria of testable hypotheses (Martin, 1968).

There is evidence that aggressiveness and antisocial behaviour are transmitted from one generation to the next, and that children abused by their parents tend to be aggressive (McCord, 1988). Emotional and psychological sequelae that have been observed during childhood as a result of parental physical abuse include impaired self-concept, lack of peer relationships, sadness, decreased ability to enjoy life, and behaviour problems. The association of harsh physical punishment and juvenile delinquency has also been demonstrated (Holmes & Robins, 1988). However, if there is a direct causal effect between parental

maltreatment of a child and his or her subsequent development of suicidal behaviour, then that relationship remains to be demonstrated. It seems much more likely to be a mechanism operating indirectly through its effect on factors such as poor peer relationships, low self-esteem, lack of enjoyment from life, and dysthymia; and that these factors in their turn contribute to the etiology of suicidal behaviour. There may be sex differences in causation. One obvious example is the possible causal pathway via juvenile delinquency or conduct disorder. As noted above conduct disturbance is a more prominent risk factor for suicide in male than female youths (Shaffer et al., 1988). This is to be expected, at least in part, because of the the higher base rates of conduct disturbance for males.

Rimsza & Berg (1988) reported a study which clearly indicated that sexually abused children and adolescents are much more likely than a matched control group to experience somatic and behavioural difficulties including suicide attempts, months to years after the abuse had been reported and presumably ended. Nakishima & Zakus (1977) had previously reported this trend. As with physical abuse the probable causal pathway can be hypothesised to be indirect through similar factors.

(iv) Family suicidal behaviour: Another family factor which deserves mention as possibly contributing to the development of suicidal behaviour is the suicide of another member(s) of the family, or a display by them of suicidal behaviour. As Hawton (1986) pointed out there is substantial evidence that suicidal behaviour both fatal and nonfatal, tends to cluster within families. He further observed that although the clustering of suicidal behaviour within families presumably reflects the high prevalence of family psychiatric disorder noted above, suicidal acts by other family members may serve as a model, so that a suicidal act becomes a more readily used method of coping at a time of severe stress.

Family clustering of suicidal behaviour revives the nature - nurture issue. At a deeper level the question is, from where does suicidal ideation originate? Is familial transmission by genetic or biologically determined means, such as the serotonergic system, as reviewed above? This appears to be an oversimplification. The likelihood of genetic transmission of thoughts is very slim. If genetic processes are implicated then it is more likely that it is a predisposition to certain behaviours which is being transmitted. Perhaps the most reasonable conceptualisation of a process whereby suicidal behaviours have

inherited components is to hypothesise that what is being propagated is the propensity to more easily learn or acquire some behaviours. This may initially be manifested in depletion of monoamine neurotransmitters, perhaps especially serotonin. However, such a depletion in and of itself is not identical with suicidal ideation. Perhaps this depletion makes individuals more prone, or predisposed, to being able to acquire and then utilize ideas such as those relating to self-destruction, which occur in the cultural and social milieu in which the individual lives. An alternative formulation to the proposal of genetic transmission is to suggest that suicidal ideation is transmitted via social learning processes, especially vicarious learning. A consistent feature of epidemiological surveys of child psychiatry is the rapid rise in frequency of suicidal behaviour as children become adolescents. Similar trends have been found in the frequency of suicidal ideas according to Kosky et al., (1986). It could be that biological events associated with puberty are causative. Or, it may be that the enormous social changes occurring at this stage of the lifespan are causative; or a combination of both. Zubrick, Kosky & Simon (1987) set out to determine whether the biological dimension of puberty or the psycho-social dimension of age, or both was significantly associated with the frequency of suicidal ideation in young people. They reported that puberty has no specific association with suicidal ideas apart from its relationship to age. This implies investigations of age-related psychosocial events require continuing research. Hutchinson & Draguns (1987) reported clinical evidence for the notion that chronic childhood exposure to parental suicidal ideation possibly increases risk of suicide in later life for that individual, perhaps when it becomes relevant. In order to review some of the evidence regarding learning and modelling of suicidal behaviour it is worth examining the theoretical foundations of the behavioural viewpoint first. This is to be found in the section (1-15) immediately after the discussion on phenomenological approaches to the development of suicidal behaviour.

1-14 Psychological Theories of the Development of Suicidal Behaviour- Phenomenological Approaches.

Mainini (1981) described the phenomenological perspective as one which

sees in suicide the significance of liberation from the anguish inherent in each human. That is, there is an emphasis on the feelings of despair, resignation and pain that lead individuals, given the circumstances, to engage in suicidal behaviour. The focus then is upon the *experience* of distress. Shneidman's (1986) cubic model of suicide is essentially phenomenological. It proposed that the three components of *press*, *pain* and *perturbation* determine suicide. Shneidman pointed out the treatment implications are to (a) reduce the hurt, (b) lift the blinders, (c) pull back from the action, and (d) lighten the pressure, even just a little bit.

This type of conceptualization exemplifies the major strength of the phenomenological approach. Namely, that individuals might survive, or better survive, the circumstances in which they find themselves by changing their *perception*, and thus their experience, of those very circumstances. As Taylor (1979) eloquently put it captivity is made captive, and suffering made endurable, when the captives and sufferers know the purpose of their captors and tormentors, and they have the emotional resilience with which to defeat it. The clinical implications of this phenomenological formulation clearly have considerable overlap with a cognitive approach (which is discussed below). Helping suicidal individuals to change their perceptions, and hence experience of features such as press, pain and perturbation will inevitably involve some work at the cognitive level. At the very least then the phenomenological approaches to suicidal behaviour should serve to remind us of the importance of asking individuals we study and meet in the clinical setting, what it is that they *experience* in terms of perceptions and feelings.

1-15 *Psychological Theories of the Development of Suicidal Behaviour: Cognitive-Behavioural Approaches.*

The literature on suicidal behaviour in young people over recent years does not contain explicit theoretical formulations belonging to the cognitive-behavioural school of psychology (which is in essence, a synthesis which attempts to provide an account of the complementarity of the 'cognitive systems' with the manifestation of overt behaviour). Rather, the tendency has been to focus on

portions of what is now widely considered to be a complex chain of behaviour with multiple determinations. From the learning point of view, the pertinent question to ask is from where do suicidal behaviours originate? Unless one indulges in magical thinking, thereby believing that the stimulus to self-destruct comes out of thin air, it would appear important to search for the origin of such stimuli. An obvious theoretical starting point is to implicate the concept of observational or vicarious learning. Observational learning occurs when an individual observes another person, or model, engage in a particular behaviour. The behaviour is learned by the observer from merely watching the model, and not actually experiencing the behaviour for oneself (Kazdin, 1984). However, observational learning processes may not be enough to account for the development of a behaviour such as suicide. It seems apparent various cognitive processes are fundamental. At the very least some kind of cognitive expectation seems to occur. Expectation might take the form of believing that all one's problems will be solved, or that the pain and distress that is being experienced will be stopped, or that one's family will be better off. In this sense the *expectation* of events can be conceptualised as reinforcing, and consideration of belief systems (which are part of the current study) becomes important. It is therefore necessary to discuss both vicarious learning and cognition with respect to the development of suicidal behaviours.

First, consider vicarious learning. Obviously it is difficult or impossible to practice overt suicidal behaviours (though some individuals who make multiple attempts before finally completing the act could be considered as practicing; furthermore it could be pointed out that frequently engaging in suicidal ideation is also a form of practicing). However, the learning of new responses by individuals may most frequently occur through the observation of the behaviour of other people (de Catanzaro, 1981). It is to be expected that issues involving life and death may enhance learning, requiring far fewer 'trials' than more mundane issues. Furthermore, verbal communication might enhance rapid learning, without the need to have direct experience and/or observation of a real-life experience. Vicarious learning obviously modifies the likelihood of specific suicidal behaviours, for example influencing the time, location and method chosen. Dramatic examples of this sort of influence can be seen in mass suicides (for example the Jews at Masada, and the Jonestown inhabitants in Guyana).

Various authors have advanced theoretical formulations to explain the

social transmission of suicidal behaviour (for example, Bandura, 1969; deCatanzaro, 1980; Diekstra, 1973; Frederick & Resnick, 1971). Common features of these positions are that an individual can acquire modeled behaviour, such as suicidal behaviour, after observation. It is important to note that the modeled behavior is not merely mimicked by the observer. Some cognitive and affective appraisal of the behaviour occurs and mediates the response, which as noted above occurs in anticipation of reinforcement. In 1985, Chiles, Strosahl, McMurtray & Linehan reported that in reviewing the literature, they found little evidence supporting or refuting a relationship between a proposed social learning factor, such as exposure to a relevant model, and suicidal behaviour. Social learning theory would predict therefore that when an individual felt like ending it all, those that had been exposed to models would be more likely to do so. Chiles et al., (1985) reported a study they conducted in which they found that both non-suicidal psychiatric and nonpsychiatric medical patient controls reported a *higher* incidence of suicidal models than suicide attempters, quite the reverse from the social learning theory prediction. It could be argued that this test of vicarious learning has failed because the presence of appropriate eliciting stimuli in the comparison groups has not been established. One may 'learn' how to make a particular behavioural response, but one is unlikely to emit that response until confronted by the eliciting stimulus which is appropriate to that behaviour. An alternative hypothesis could be that exposure to friends, relatives etc. who suicide may *decrease* the likelihood of an individual engaging in suicidal behaviour, if the outcome of the model's behaviour is appraised in a negative way, that is seen as punishing. More research is clearly needed. In the meantime though it is worthy of note that there is some more recent (albeit equivocal) evidence of 'contagion', or imitation of suicidal behaviour. Clinical evidence of *bizarre* attempts being replicated by others is forthcoming (e.g. Kaminer, 1986). And, perhaps far more serious, with its implied insidiousness, is the evidence of imitation effects following the exposure of suicidal behaviour through the media, especially television. First described as the "Werther effect" (after the 18th century novel by Goethe) it is methodologically complex to 'prove' causality. Gould & Shaffer (1986) were presented with an opportunity to search for a "Werther effect" during 1984 - 5 when four films dealing with suicide were broadcast on television after a lot of advance publicity. They reported statistically significant results, consistent with the hypothesis that, at least some, youth suicides are imitations.

However, a replicative study , using the same films when shown in California and Pennsylvania failed to produce a significant effect (Phillips & Paight, 1987). In a related approach Phillips & Carstensen (1986) used time-series analysis to demonstrate a clustering of youth suicides after television news stories featuring suicides. In a recent study Berman (1988) found some support for an imitation effect specific to the depiction of a *method* of suicide, but not an increase in *numbers* of suicides. This research supports the viewpoint discussed above that an eliciting stimulus is required before a (vicariously) learned behaviour is emmitted. No doubt more research will be forthcoming.

Whatever the outcome of investigations into the "Werther effect", from the social learning perspective it is probable that stress and personal problems are likely to have been present before exposure to the 'modelled' behaviour. It is likely that modelling or imitation are ancillary rather than primary causes in individual cases (de Catanzaro, 1981). Perhaps the outcome of future research will be to find that media stories about suicide (whether fictional or not) can operate as triggers for some individuals.

Having considered vicarious learning it is proposed to discuss cognition, and its possible role in suicidal behaviours before going on to a more detailed consideration of putative psychological determinants of suicidal behaviour. Several theorists have provided formulations of behaviour that attempt to integrate aspects of different learning paradigms and take into account cognitive processes, such as thoughts, beliefs and perceptions (Kazdin, 1984). This has resulted in a synthesis, where compatibility and/or complementarity could be demonstrated or assumed, between the behavioural and cognitive schools of psychology. How then might cognition be involved in the development of suicidal behaviours? The conceptualization that cognition is involved in the production of behaviour is not new. For example, the dialogues of Socrates contain the forerunners of cognitive therapy in that they showed how 'Man could be changed by appeal to reason alone' (Rapp, 1980). Modern cognitive theory has largely been predicated on the assumption that maladaptive reaction patterns, or behaviours, have been acquired, and therefore can be unlearned or modified. The central cognitive product common to modern conceptualizations is the "belief". Irrational beliefs are presumed to be modulators in the production of maladaptive behaviour. In this way cognitive events are believed to be causal of behaviour, *between* the stimulus and the response. Once again an historical example serves to remind that these ideas are not new. The Stoic philosopher, Epictetus, noted that Men are not disturbed by events, but by the views they take of them (Ivey, Ivey & Simek-Downing, 1987).

The A-B-C model of Rational Emotive Theory/therapy (RET) is a useful perspective within which to discuss cognitive research on suicide. According to this model "A" refers to Antecedent conditions, "B" refers to Beliefs about those antecedents, and "C" refers to the emotional and behavioural Consequences of the belief systems. Essentially, research involving demographic variables focuses on "A" variables, the antecedents. As Woods & Muller (1988) pointed out this leads to what may be termed the "A-C error". That is, the conclusion that the "C-level" consequence, i.e. suicide, is *caused* by "A-level" antecedents such as poverty, unemployment or divorce. Such conclusions make the assumption that suicidal behaviour is directly caused by such antecedents as environmental events. Cognitive theory however proposes that behaviour, such as suicidality, is modulated by cognitive events, such as higher cortical processes. Put succinctly in a way highly reminiscent of Epictetus, the contemplation of suicide and the act

itself would be caused, then, not by the circumstances of one's life (whether they be historical or current) but by the *way one views* those circumstances or one's self or one's future in relationship to those circumstances. (Woods & Muller, 1988).

In brief then, the cognitive approach is one in which research is aimed at comparing and contrasting individuals who engage in suicidal behaviour with those who do not, with particular reference to the form and content of their thoughts (cognitive products). Before looking at the combined cognitive and behavioural approaches in more detail it is worth considering the compatability, or incompatibility of cognitive models with the biological model, which forms the basis of current orthodox medicine. Many psychiatric disorders are manifest, at least in part, as disturbances in cognitive products. It could be that cognitive 'structures', and therefore processes are dysfunctional. This viewpoint might be crudely labelled the "faulty software" approach. Or, it may be that biologic 'structures', be they neurological, hormonal or biochemical, are dysfunctional. Once again a crude label might be the "faulty hardware" approach.

Whilst there is evidence for problems in both "hardware " and "software" in psychiatric disorders, the compatability of these approaches runs into difficulties with respect to the issue of primacy. Whilst a medical model viewpoint would propose that biologic disturbance comes first, the cognitive theorist would point to evidence that those who focus on such organic variables are not going back far enough in the causal sequences of events. (Woods & Muller, 1988). A good example of cognitive primacy is to be found in the literature indicating the role played by cognitions in producing the hormonal and biochemical antecedents of stress. The *psycho* physiology of stress is well recognized. Furthermore, the evidence for greater therapeutic efficacy of, and *psycho*-prophylaxis of cognitive interventions over pharmaceutical treatments for depression (e.g. Blackburn et al., 1981; Blackburn et al., 1986) adds weight to the *causal* importance of cognitive factors. Perhaps implicit in this 'medico-psychic' dichotomy is a metaphysical tendency to Cartesian duality. A multifactorial approach seems more appropriate.

In terms of cognitive primacy, however, some preventive strategies for suicidal behaviour could focus on, not creating the causal conditions in the first place. This requires (a) identification of causal cognitive conditions, and (b) teaching the young to think more 'rationally' and/or how to cope with the loss

of 'rationality' if it occurs.

The purpose of the current study is to attempt to identify some of the cognitive conditions which are causal to suicidal behaviour. From the RET framework, as discussed above, this involves measuring 'beliefs' or B-level variables, and searching for their relationship to 'contemplation of action' or C-level variables. B-level variables have been demonstrated to be related to C-level variables (Woods & Muller, 1988), so it is reasonable to argue that the intention to engage in suicidal behaviour could be reduced by changing belief systems.

1-16 Putative Psychological Variables Involved in the Development of Suicidal Behaviour.

There have been numerous (cognitive-behavioural) psychological variables proposed as contributors to suicidal behaviour. Some have been relatively well-researched, others less so. They are not presented in any order ranked by importance.

1-17 Putative Psychological Variables Involved in the Development of Suicidal Behaviour- COPING.

Coping can be defined as comprising an individual's constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the person's resources (Lazarus & Folkman, 1984). As such, coping is process oriented, contextual, and not judged on an a priori basis as good or bad. Suicidal behaviour clearly can be conceptualized as a coping (or not coping) response, albeit a very complex one.

Houston (1987) proposed a model of psychological stress and coping. In this model coping is a response or responses whose purpose is to reduce or avoid psychological stress. It is again process oriented, contextual, and non-judgmentally described. One advantage that this model holds is it's ability to communicate the temporal dimension of coping. At least three kinds of stimuli

are recognised as potential psychological stressors: thwarting of desires; unlearned aversive stimuli; and learned aversive stimuli. It is important to note that anticipation of, or memory for these stimuli may produce dysphoria, as well as actual experience of them. This could be of importance for the study of suicidal behaviour. For example, hopelessness may possibly be conceptualised as some sort of anticipatory coping response, in the sense that an individual may produce a current coping style in response to a belief about future thwarting of desires.

Individuals may use coping responses with or without being aware of so doing, according to Houston (1987). Like many overlearned behaviours one may employ habitual or automatic coping responses without being aware of them. This seems especially important to the cognitive investigation of suicidal behaviour. For example suicidal ideation may occur at preconscious cognitive levels, and may not appear in the more obvious focus of attention to the 'cognitive stream' until the individual is further along a chain of behaviour where there is an increase in the probability of suicidal behaviour being emitted. One can speculate that this scenario might occur in the so called impulsive suicide, or attempt.

Individuals may avoid negative affect through learned coping responses which are designed to reduce psychological stress. Houston (1987) suggested that coping responses can be divided into two major categories, namely covert (those that occur within an individual), and overt (those that are action-oriented). Positive covert coping strategies might include confronting the issue at hand, engaging in assertive cognitive planning, making the decision to seek help from others, and making lifestyle plans that are appropriate. Negative covert coping strategies might include cognitive planning, for example suicidal ideas and plans. Other negative types of covert coping include cognitive avoidance or escape (that is not wanting to face up to thinking about a particular issue), and/or cognitive reinterpretation of events (for example through rehearsal in the individual's imagination) which may lead to ideas of suicide. Judgements regarding the positive or negative nature of coping responses employed by an individual are made from a moral standpoint. Clinicians would be well-advised to remember this; that their personal values may lead them to conclude that an otherwise adaptive coping response used by an individual is negative and should be modified. For example, a withdrawal into fantasy could be an effective coping response for an individual faced with stressors, yet may appear to be negative.

Modifying this response without replacing it with an effective alternative may leave the individual in an even more difficult position. Overt coping responses may include actions such as seeking therapy or, more dramatic actions, amongst which might be an attempt to terminate one's consciousness, either temporarily or permanently.

Peterson & Hamburg (1986) suggest that the capacity of the individual to cope with adolescence is related to the resources he or she brings to a situation. Prior social circumstances and environments may serve to strengthen or limit the individual's development of coping capacity. This may, at least in part, explain the wide range of coping abilities between people. Hawton (1986) suggested that suicidal behaviour in others can provide the model for coping. As discussed above, there is little evidence currently to support this. It is inevitable that the relationship between coping observed in others and coping used by an individual is complex. After all coping responses do not occur in isolation from all other responses to real-life situations. In real-life they are likely to occur in multiples, not necessarily of the same type. That is both covert and overt coping responses are more than likely to coexist.

Coping is believed to have two important functions according to Folkman, Lazarus, Dunkel-Schetter, deLongis & Gruen (1986). The first is the regulation of stressful emotions, or emotion-focused coping. And the second is the altering of troubled person-environment relations which are causing distress, or problem-focused coping. Compas, Malcarne & Fondarco (1988) reported findings indicating that older children and young adolescents use both of these coping strategies. However, they also found that adaptive problem-focused coping strategies are more fully developed for this age group than emotion-focused coping strategies. This may mean that older children and young adolescents are more likely to use overt coping responses, such as hitting out at or verbally abusing a problematic situation, rather than a more covert emotion-focused response such as negative affect. If an instrument were sensitive enough it may be possible to detect such differences in coping style, across age, with respect to suicidal behaviour.

Asarnow, Carlson & Guthrie (1987) hypothesised that depression and suicidal behaviour would be associated with a tendency to generate fewer and less adaptive coping strategies. Studying children 8 to 13 years old, they employed the Coping Strategies Test (developed by Elias, Larcen, Zlotlow & Chinsky, 1978) to

assess children's responses to three hypothetical stressful situations which represented a disciplinary crisis, a parental conflict, and a bereavement. Quantity of adaptive coping strategies did not differentiate suicidal from nonsuicidal children. However, nonsuicidal children were found to generate more active cognitive coping strategies (using self-comforting statements or instrumental problem-solving such as "take things one day at a time") than suicidal children. Further research appears necessary. This was also the view of Khan (1987) who concluded that a comprehensive analysis of 'coping style' in future studies of adolescents may reveal better predicting variables for suicidal potential.

It appears therefore that there is justification for investigating coping as a variable in part causal of suicidal behaviour, possibly modulated by age. One suitable instrument for measuring coping is the Ways of Coping Questionnaire (Folkman, Lazarus, Dunkel-Schetter, de Longis & Gruen, 1986). This is a structured protocol which is used to elicit self-report information about the most stressful encounter the respondent has experienced during the previous week.

1-18 *Putative Psychological Variables Involved in the Development of Suicidal Behaviour- DEPRESSION.*

The biomedical or mental illness explanation for suicidal behaviours is epitomised by David Shaffer (1989) in his expressed belief that suicide is strongly related to psychiatric disturbance. There are a great number of studies, too numerous to list, which have estimated the prevalence of psychiatric disorder in completed suicides to be over 90%. Prevalence estimates of psychiatric disorder for adolescent suicides tend to be far lower, and lower still for attempted suicides (Hawton, 1986).

The psychiatric disorder most frequently associated with suicide and suicidal behaviour has, of course, been depression (e.g., O'Brien, Holton, Hurren, Watt & Hassanyeh, 1987; Apter, Bleich, Plutchik, Mendelsohn & Tyano, 1988). However, despite the fact that a significant association exists between depression and suicidal behaviour (with suicidal ideation being a possible contributor to the diagnosis of depression) it is a clinical reality that the vast majority of depressives live relatively long lives, though perhaps, unhappily. The same is also true of

schizophrenics (Shneidman, 1986). It is therefore necessary to be cautious in using relatively common phenomena (such as depression) to account for the production of rare phenomena (such as suicidal behaviour). Given that there is an association between depression and suicidal behaviour, and that not all depressives are suicidal, the question is whether the relationship between these two variables is causal. Some researchers have attempted to find a subset of depression which is important to the development of suicidal behaviour. Much of this type of research has focused on suicidal individuals view of the future. The variable most widely studied in this context has been hopelessness, which is discussed in detail below. Other researchers have attempted to isolate a subset of depressives who are suicidal to compare with those that are not. A recent study by van Praag & Plutchik (1988) has supported the clinical observation that a subgroup of depressed patients, namely those who have made previous attempts, are the ones likely to make overt suicidal attempts. Furthermore, that once a suicide attempt has been made, such a patient is at high risk for more suicide attempts if future depressions occur. However, a group hypervulnerable to suicide could not be found. The utility of nosological labels (such as DSM-III-R, American Psychiatric Association, 1987) for estimating suicide risk is therefore questionable. If a subgroup of 'suicidal depressives' could be reliably identified, and categorised, then such utility would undoubtedly be enhanced. This is not to say that a history of a previous attempt in a depressed individual has no predictive or preventive utility; it generally has, especially for young males (Shaffer, 1989). However, the likelihood of such a development seems quite distant at this time. It is clear that affective illness follows a course and is not a constant clinical state. Suicidal ideation is not a constant either. A recent study linking suicide to the course of illness in major affective disorder concluded that there is variation in correlation of these two variables when they are observed longitudinally (Roy - Byrne et al., 1988). This leads to the conclusion that *suicide risk among depressed patients needs to be continuously reappraised*.

Of significant interest to this psychiatric illness approach, is the finding that excess mortality among psychiatric patients is more attributable to physical causes than suicide. Two studies, one in Israel (Zilber et al., 1989) and one in France (Casadebaig & Quemada, 1989) found high excess mortality due to respiratory diseases by following up large cohorts of psychiatric inpatients. This implies it is as important, if not more so, to follow up the physical health of psychiatric

patients.

The lifetime probability of death by suicide has been summarised by Robins, Helzer & Croughan (1981). For individuals with major affective disorder it is 25-30%, for schizophrenics 10-20%, for alcoholics 15-25%, and less than 1% for individuals without psychiatric disorder. Tejedor, Castillon, Pericay, Puigedellivol & Turnes (1987) concluded that suicide risk for schizophrenics is significantly increased by the presence of depressive and negative symptomatology, rather than by thought disorder symptoms.

In a recently published study Brent, Perper, Goldstein, Kolko, Allan, Altman & Zelenak (1988) conducted a search for risk factors contributing to suicide in adolescents. They did this by comparing 27 cases of completed suicide (by psychological autopsy six months after the death) with 56 suicidal inpatients, on a large number of demographic and life history variables. Both completers and suicidal inpatients were assessed for psychopathology corresponding to DSM-III (1980) categories. Brent et al., reported that the suicide completers and suicidal inpatients had very similar high rates of affective disorder. Also there were similar rates of family histories of affective disorder, antisocial disorder, and suicide. Factors which differed between the groups were diagnosis of bipolar disorder, affective disorder with nonaffective comorbidity, lack of previous mental health treatment, and firearms available in the home. Brent, Perper, Kolko & Zelenak (1988) presented a defence of the psychological autopsy method. The reliability and validity of this method suffers from a paucity of research.

As discussed above, there is a link between depression and suicidal behaviour. This is reflected, for example, in suicidal ideation, plans and attempts being listed as possible symptoms contributing to a major depressive episode (DSM III-R, 1987). It is also reported that 10 to 15% of depressives commit suicide, whilst approximately two thirds think about it (Kaplan & Saddock, 1988). Depression and suicide, however, are not synonymous (Shaffer, 1989). A diagnosis of depression does not constitute a total assessment of suicide risk per se. In fact the clinical utility of such a diagnosis is virtually nil in assessing risk of suicidal behaviour, because there would be an overwhelming number of false positives. It does however serve to remind the clinician of the necessity to evaluate suicide risk.

Attempted suicide is less likely to be associated with an overt depressive disorder than completed suicide, and this holds true for adolescents also (Hawton,

O'Grady, Osborn & Cole, 1982). Depressive disturbances do not show the same age related pattern as the peak age for suicide attempts is 15 to 19 years (Kreitman, 1977), with a progressive decline thereafter. It is apparent then that differences in depressive disorders across age are insufficient to account for the pattern of attempted suicide.

The most frequently espoused cognitive theory of depression is that of Beck (1967). According to this approach specific cognitive structures (the cognitive triad, schemata, and cognitive errors) are central in the development and maintenance of depressive disorders. It may be that a subset of these 'depressogenic' cognitive structures are specific to suicidal behaviour. Beck, Kovacs & Weissmann (1975) hypothesised that the critical construct, for the contemplation or enactment of suicidal behaviour, is despair or hopelessness. Hopelessness as a predictor variable is discussed below.

The "attributional reformulation" of the learned helplessness model (Abramson, Seligman & Teasdale, 1978) proposed that long-lasting feelings of helplessness and depression will result when an individual believes his or her failure is stable, internally caused, and will persist into the future. Whilst this theoretical formulation loosely parallels Beck's cognitive triad it remains somewhat controversial (Rosenhan & Seligman, 1984). Having been experimentally derived from animal research it is not entirely clear to what extent it holds true for humans, or to the severity of depression for which learned helplessness may account. Nevertheless cognitive attributions surely hold positive lines of enquiry for further research.

The concept that suicidality is at least in part a subset of depressive symptomatology has wide appeal. And, at the minimum suggests the necessity for investigating the relationship between any 'new' predictor variables found and depression. Furthermore, in order to illuminate predictor variables unique contributions partialling out any covariance provided by depression is advantageous.

1-19 *Putative Psychological Variables Involved in the Development of Suicidal Behaviour- FLEXIBILITY/RIGIDITY.*

Cognitive flexibility, or rigidity, has also been proposed as a psychological determinant of suicidal behaviour. This lack of flexibility, or rigidity in thinking is presumed to produce an inability to conceive of behavioural options other than suicidal behaviour. Certainly, Shneidman's (1986) phenomenological approach is in accord with this viewpoint with the notion that the common perceptual state in suicide is *constriction*. This leads to the idea of having the 'blinkers' on.

Neuringer (1976) reported evidence that he and Levenson had collected with respect to 'suicidal thinking'. Both the Rokeach Map Reading Problems Test, and the California Psychological Inventory F (CPI-F) Scale were used to demonstrate significantly more socially rigid and inflexible thinking in suicidal patients. They found this to be true for adolescents also. Petrie, Chamberlain & Clarke (1988) in their attempt to isolate predictors of repeat suicide attempts also used the CPI-F to measure cognitive rigidity and found that it did not significantly predict suicidal ideation (in attempters) either at the time of hospitalization, or at 6 months follow-up.

In a study aimed at investigating cognitive functioning in suicidal children, compared to chronically ill and normal children, Orbach, Rosenhein and Hary (1987) measured cognitive inflexibility. Their definition of cognitive inflexibility, however, was narrowly limited to the ability to generate alternative ideas about a given situation. In effect this is a test of hypothesis formation, which may be more closely related to problem-solving, than cognitive rigidity. Moreover they failed to adequately control for the effects of IQ, which is conceivably strongly related to the ability to find new alternatives. This appears to be the first investigation into the relationship between cognitive flexibility and suicidal behaviour in children, so it is unfortunate that the research design was less than adequate to deduce sound conclusions.

It could be argued that dichotomous thinking is related to an inability to understand or empathise with another person's point of view. From the Piagetian standpoint a possible method to tap into this ability in children could be to use some modification of Piaget & Inhelder's (in Phillips, 1981) 'three-mountains problem'. This problem requires the child to take another person's point of view toward a physical display.

1-20 *Putative Psychological Variables Involved in the Development of Suicidal Behaviour- HOPELESSNESS.*

Hopelessness can be defined as a person's system of negative expectancies concerning himself or herself and future life (Beck, Weissman, Lester & Trexler, 1974). The phenomenology of suicidal behaviour is reported by some authors (e.g., Orbach, 1986) to include a 'state of mind' brought about by facing apparently insoluble problems called hopelessness. There is intuitive validity in the notion that lack of hope should correlate with suicidal tendency. It has also become widely accepted that hopelessness/ pessimism/ negative expectancies is a central feature of the depressive constellation. Seligman's and colleagues' attributional reformulation of the learned helplessness model of depression placed a greater emphasis on hopelessness. Likewise Beck's cognitive theory of depression contains a negative view of the future as one of the elements of the cognitive triad. Beck & Lester (1973) reported a review of six factor analytic studies linking negative attitudes about the self and future with suicidal tendencies as one of the components of depression. Furthermore they reported in a new study that they had observed a factor with loadings of more than 0.50 on suicidal wishes, pessimism, lack of satisfaction, crying spells, sad mood, sense of failure, and self-hate in a sample of 254 attempted suicides. Thus a causal connection between hopelessness and suicide seemed reasonable.

Topol and Reznikoff (1982) found scores on the Beck Hopelessness Scale (Beck et al., 1974) to be significantly different between adolescent suicide attempters and nonsuicidal controls. Goldney (1981) reported a relationship between depression and suicidal intent (as measured by the Beck Suicidal Intent Scale, 1974) which lost significance when hopelessness was controlled for. The implication is that hopelessness lies behind at least a part of the relationship of depression and suicide. In fact a series of research findings, reviewed by Greene (1989) has found suicidal intent (measured by the Beck Suicidal Intent Scale, Beck et al., 1974) to be more highly correlated with hopelessness (measured by the Beck Hopelessness Scale, Beck et al., 1974) than with depression (measured by the Beck Depression Inventory, Beck et al., 1961). And, this finding was maintained when the influence of depression was controlled. Furthermore, the superiority of hopelessness as a predictor of suicidal behaviour, over depression, has been demonstrated in a variety of clinical samples (Petrie, Chamberlain & Clarke,

1988).

Beck, Steer, Kovacs & Garrison (1985) summarized the theory, emphasising the importance of depression and hopelessness as causal factors of suicidal behaviour. Hopelessness was conceptualized as a cognitive mediator, between depression and suicidal behaviour, which is not a stable trait, but a dynamic psychological state subject to escalation during intrapsychic disturbances.

Given the strong indication of the usefulness of hopelessness as a predictor, it is reasonable to question the conditions under which it may be valid. For example, is hopelessness related to suicidality of varying degrees of severity? Reynolds & Eaton (1986) found that multiple attempters (3 or more occasions) and first attempters did not differ with respect to their Beck Hopelessness Scale scores. However, Beck's Suicide Intent Scale scores were found to significantly (Multiple $R = .60$, $p < .05$) predict Hopelessness in a multiple regression analysis, which also included measures of lethality, depression, impulsiveness and drug and alcohol abuse. This analysis is unusual, in that hopelessness is usually considered to be a critical variable in the prediction of suicidal intent, according to the theory discussed above, not the reverse. Whether suicidal intent can be meaningfully interpreted as causal of hopelessness is an interesting question, which to the author's knowledge has not been addressed in the literature. However, the possibility of reciprocal causal interaction between the two variables of hopelessness and suicidal intent cannot be discounted. Schotte & Clum (1982; in Bonner & Rich, 1987) reported that while hopelessness was the better predictor of the highest levels of suicidal ideation, depression was the better predictor at lower levels of ideation. If 'levels of ideation' can be equated with intent, then this study is in contradiction with a recent investigation into hopelessness and low-intent suicidal behaviour (Schlebusch & Wessels, 1988). These investigators concluded there is a relationship between hopelessness and suicidal behaviour in low-intent patients. However, this apparent contradiction is most likely explained by the fact that the former study used only ideators, whereas the latter used only attempters. Perhaps 'low-intent' attempters are at least as high on severity of suicidal behavior as the 'higher levels' of suicidal ideators. This appears quite reasonable.

Another relevant issue regarding hopelessness is its relationship to age. Whilst it is apparent that a sense of hopelessness, rather than general depression, is a major factor in determining suicidal behaviour for both adolescents (Hawton,

1986) and adults from clinical populations (Petrie et al., 1988), the question remains as to whether this is true for pre-adolescent children as well. With the development of the Children's Depression Inventory (Kovacs, 1980) and the Children's Hopelessness Scale (Kazdin, French, Esveltd-Dawson & Sherrick, 1983) it has become possible to investigate this issue. Kazdin, French, Esveltd-Dawson & Sherrick (1983), using the latter demonstrated that hopelessness was more consistently correlated with suicidal intent than depression, in a sample of children aged 8 to 13 years. The children in the sample include both ideators, and attempters.

Pfeffer, Newcorn, Kaplan, Mizruchi & Plutchik (1988) found that hopelessness was *not* associated with suicidal tendencies, either at initial interview or at two-year follow-up. Their sample, aged 6 to 12 years, was 88% nonsuicidal, 9% ideators, and 2 'threateners'. Asarnow, Carlson & Guthrie (1987) reported that feelings of hopelessness, in a sample of 8 to 13 year olds, were associated with both severity of depression and increased suicidal behaviour, thereby replicating Kazdin's et al., (1983) findings. However, when depression was controlled for the relationship between hopelessness and suicidal behaviour lost significance. Their sample was 40% nonsuicidal, 33% ideation only, and 10% attempters. Perhaps these equivocal results may best be interpreted, therefore, in the light of low- and high-intent subjects, as discussed above for adults. It may be that hopelessness is a better predictor for high-intent individuals, and depression for low-intent individuals, with respect to suicidal behaviour.

From a developmental point of view it has been argued (e.g., Siomopoulos & Inamdar, 1979) that in order to arrive at a feeling of hopelessness an individual must be capable of experiencing the necessary components of affect and cognition, including time perspective and probability assessment. These authors believe the appropriate cognitions do not emerge fully until the Piagetian stage of formal operations, possibly about age 13 to 14 years (Inhelder & Piaget, 1980). Kashani, Reid & Rosenberg (1989) reported that hopelessness did *not* increase with age from preadolescence through to late adolescence. They used 8, 12 and 17 year olds with equal numbers of males and females. The vast majority of the sample belonged to a 'moderate hopelessness' group, and were not actively suicidal. However, of considerable interest is the substantive finding that the *prevalence* of hopelessness (at least as measured by the Children's Hopelessness Scale) does not appear to be significantly related to age, which is in accord with the findings of

Kazdin et al., (1983) , but in conflict with the developmental formulation of Inhelder & Piaget (1980). As discussed above, attempted suicide has a peak rate at 15 to 19 years, and is relatively rare prior to puberty (Kreitman 1977; in Rutter, 1986). However, if hopelessness is a *major* determinant of suicidal behaviour then it would be expected to reflect this in its prevalence, especially in children. That is we know the prevalence of suicidal behaviours increases with age, but the evidence currently available suggests that the prevalence of hopelessness is not related to age. Therefore, it may be that while hopelessness per se is important to the prediction or cause of suicidal behaviour, it does not appear to be sufficient. Further research is required.

One other issue of importance with regard to hopelessness is whether its predictive value is culture-bound. Rotheram-Borus & Trantman (1988) studied predominantly black and Hispanic female adolescent suicide attempters. They reported that (Beck) hopelessness was neither significantly correlated with, or predicted in a regression analysis, suicidal intent scale scores. The conclusion reached was that hopelessness should not be used as a clinical assessment of suicide risk with 'minority' adolescent girls. Furthermore, Chiles, Strosahl, Ping, Michael, Hall, Jemelka, Senn & Reto (1989) compared adults in the USA with adults in the Peoples Republic of China on a variety of variables theoretically related to suicidality, including hopelessness. However, hopelessness (measured by a Chinese translation of the Beck Hopelessness Scale) did not show a relationship with suicidal intent for Chinese. These intriguing results are suggestive that hopelessness is at least in part culture-bound.

In 1981, Linehan and Nielsen reported that social desirability factors may be confounded with hopelessness scales. They found a high negative correlation between the Beck Hopelessness Scale and the Edwards Social Desirability Scale ($r = -.67, p < .001$) for a large sample of the general public in a shopping centre. They advised caution in using self-report inventories of hopelessness, for example in assessing suicidal behaviour. Linehan & Nielsen (1983) made explicit some more results from their earlier data. Significantly, the positive relationship between hopelessness scores and self-reports of prior, current, and predicted future suicide behaviour was lost or substantially reduced when social-desirability (i.e. ESDS) is controlled.

Also in 1983, Petrie & Chamberlain in New Zealand attempted to replicate Linehan's & Nielsen's result in a clinical sample (they used 54 adult suicide

attempters). Instead of using the Edwards SDS, they employed the Marlowe-Crowne Social Desirability Scale, MCSDS (Crowne & Marlowe, 1960). They reported social desirability had no influence on hopelessness, while hopelessness was significantly related to suicidal behaviour ($r = .45, p < .001$). Strosahl, Linehan & Chiles (1984) proposed that these discrepant results were produced because the MCSDS is 'not really a measure of social desirability at all'. They proposed that the MCSDS measures the tendency to lie, or engage in deliberate image manipulation. Of course, the implications of this debate for suicide assessment are quite profound. Individuals responding in a 'socially desirable' fashion may cause an increase in the rate of *false negative* risk assessments, assuming suicide to be socially undesirable.

Ellis (1985) used a clinical sample of adults and the Irrational Beliefs Test (Jones, 1969; in Ellis, 1985), the Beck Hopelessness Scale (BHS), and the MCSDS. He concluded that Petrie and Chamberlain's (1983) result that the BHS is little affected by social desirability as measured by the MCSDS was supported. But, he also concluded from the lack of positive correlations between MCSDS and specific subscales of the Irrational Beliefs Test (i.e. Need for Love and Problem Avoidance), that the MCSDS may not be measuring a social desirability response bias. Ellis proposed that instead the MCSDS may be tapping a 'somewhat circumscribed aspect of psychological adjustment'. However, Crowne & Marlowe (1964) had reported that the Edwards SDS is highly correlated with indices of psychopathology and psychological adjustment. There is evidence that this may be true of social desirability measures in general (McCrae & Costa, 1983).

Besides the choice of social desirability measures, the other issue which is at stake in this debate is whether the relationship between self-reported hopelessness and suicidal behaviour depends on the population being studied. Cole (1988) attempted to address both these issues. He reported that hopelessness is significantly related to suicidal behaviours after controlling for social desirability and depression, only in a seeking-treatment group of college students and not in a non-treatment group. He also found that the choice of social desirability measures was critical. The ESDS was overly sensitive to depression, especially in the seeking-treatment group. But, the MCSDS did not load as strongly on to the Social Desirability factor (compared to the ESDS and MMPI-K scale). In summary, Cole (1988) demonstrated that the links between hopelessness and suicidal behaviour depend both on the type of sample, and on

the social desirability measure.

Holden, Mendonca & Serin (1989) pointed out, despite the lengthy debate about what social desirability is, this question is still contentious. A unidimensional interpretation of social desirability has not been supported by factor analytic research. O'Grady (1988) concluded a two-factor model is the most parsimonious. Holden & Fekken (in press) suggest that one factor of social desirability is to do with focused and realistic thinking, social integration, self-confidence, and hardiness. Whilst the second factor relates to considerateness, social sensitivity, and tolerance. Holden & Fekken have abbreviated these factors to a 'general sense of capability' and 'interpersonal sensitivity' respectively. Holden et al., (1989) proposed, and tested an interactional model of hopelessness and social desirability with respect to suicide. They provided evidence for the following equation:

$$\text{Suicide} = \text{Hopelessness} + (\text{Sense of Incapability} \times \text{Hopelessness})$$
 where the Sense of Incapability represents a negative social desirability (component). That is, both negative cognitions about the future, and the interaction of these with a lack of self-efficacy or sense of incapability are associated with suicidal behaviour. Cognitions of self-capability would be predicted to reduce the link between suicide and hopelessness. Nonclinical subjects may provide confusing results because of this. Clearly more research is required to shed light on the relationship between social desirability and suicide. Future research could explore the role of 'capability/ incapability' cognitions.

1-21 Putative Psychological Variables Involved in the Development of Suicidal Behaviour- PROBLEM-SOLVING.

According to Platt, Spivack Altman Altman & Peizer (1974) emotionally disturbed adolescents, in general, have been found to be poor problem solvers. Suicidal adolescents have been shown to be even more deficient in their ability to solve problems, having both a skills-deficit and a diminished capacity (Hynes, 1976).

Linehan, Camper, Chiles, Strosahl & Shearin (1987) examined the relationship between one particular type of problem solving and suicidal

behaviour, namely interpersonal problem solving. These researchers used a sample of psychiatric patients in approximately equal groups of nonsuicidals, ideators, and attempters. A measure of interpersonal problem solving ability (the Means-Ends Problem Solving Procedure) was employed, as well as measures of assertion (the Rathus Assertiveness Inventory), and suicidal behaviour. Assertion was not found to be related to suicidal behaviour, though psychiatric patients in general scored lower than medical controls. Active interpersonal problem solving, while failing to distinguish suicidal from nonsuicidal psychiatric patients, did separate ideators from attempters. Attempters were found to score significantly lower than ideators in active interpersonal problem solving. Whilst these results are suggestive, further research is needed to address the paucity of knowledge about the problem solving abilities of suicidal people. It is conceivable that skill-deficits may be quite domain specific.

Poor problem solving could be conceptually related to cognitive rigidity or the lack of flexibility in thinking. As discussed above, one outcome of such rigidity might be less hypothesis generation, and therefore weaker ability to solve problems. Neuringer (1976) pointed out that the ability to solve problems would seem to be crucial for people under stress. It is not clear whether individuals problem solving ability decreases just during the period of crisis. Memory is a powerful tool with a wide variety of adaptive functions. Are there memory changes before, during and/ or after crisis periods? These are cognitive variables about which little is known. It could be a fruitful area for research.

1-22 Putative Psychological Variables Involved in the Development of Suicidal Behaviour- (ADAPTIVE) REASONS FOR LIVING.

The content of belief systems regarding adaptive beliefs and expectancies, may be able to be used to differentiate suicidal from non-suicidal persons. The vast majority of suicide research to date attempts to identify *maladaptive* attributes of suicidal people which can be used in the prediction of suicidal behaviour. Viktor Frankl is an existentialist who found (through his own experience of a Nazi concentration camp) that even under conditions of suffering life can be meaningful (Rosenhan & Seligman, 1984). This type of approach, the

focus on life-maintaining characteristics, has been suggested as an alternative way of conceptualizing suicidal behaviour by Marsha Linehan and her colleagues. Linehan, Goodstein, Nielsen & Chiles (1983) constructed an instrument called the Reasons for Living Inventory, which they used to test the hypothesis that suicidal individuals would ascribe less importance to such beliefs, such as a set of adaptive beliefs and expectancies which are life-oriented and might mitigate against committing suicide. Factor analysis in a pilot study indicated six primary reasons for living: survival and coping beliefs; responsibility to family; child-related concerns; fear of suicide; fear of social disapproval; and, moral objections. Two studies were then conducted, the first with a general population and the second with a clinical sample. Both samples included attempters and ideators. In the former sample fear of suicide (as a reason for living) discriminated previous ideators and previous attempters. In the clinical sample child-related concerns discriminated current ideators and current attempters. And, in both groups survival and coping, responsibility to family and child-related concerns were the most useful at differentiating severity of suicidal behaviour.

Bonner & Rich (1987) incorporated this concept into an interactional model of suicidal behaviour whereby high levels of adaptive reasons for living can counteract significant psychological and social stressors and reduce the likelihood of suicidal behaviour. In contrast low levels of adaptive reasons for living will present little or no obstacle to stressors. In a study of college students (only 3% of whom reported previous suicide attempts) Bonner & Rich found the Reasons for Living loaded onto a factor with a measure of family cohesiveness (the Cohesiveness subscale of the Family Environment Scale). They found this combination factor to be predictive of both low and high suicidal ideation. The nature of the sample (totally non-clinical) however, may be providing confusing results. They did not enter the Reasons For Living Inventory scores into the analysis prior to combining them into the factor with the measure of family cohesiveness.

In a very recently published study using the Reasons For Living Inventory, Cole (1989) reported that adolescents, like adults, who report more reasons for staying alive were less apt to report past or recent suicidal ideas or behaviours. He also reported that while fear of suicide distinguished adult severity of suicidal behaviour, this was not the case for adolescents. The moral objections subscale differentiated adolescent ideators from attempters. Furthermore, Cole found that

fear of social disapproval was not related to suicidal thoughts or behaviour. More research using Linehan's et al., (1983) Reasons For Living scale is required. The current study was designed to make use of this instrument.

1-23 Putative Psychological Variables Involved in the Development of Suicidal Behaviour- PERSONALITY and PERSONALITY DISORDERS.

Whilst the belief in a 'suicidal personality' has generally been abandoned there remains a view that personality factors are of importance in suicidal behaviours. The association between personality disorder and suicidal behaviour has been recognized. For example, it is a prominent feature of borderline personality disorder, even constituting a diagnostic criterion (Kaplan & Saddock, 1988). Furthermore, in a study of psychiatric disorder and suicide attempts in Edmonton, Dyck, Bland, Newman & Orn (1988) found differences between males and females. Both male and female attempters were likely to suffer from alcoholism and major depressive episode. However, male attempters also tended to experience antisocial personality disorder, whereas for females phobic disorders were present.

In a review of research to date Casey (1989) pointed out the appropriateness of studying the relationship between personality and suicidal intent. However, there is very little research to date, and what results there are have been conflicting. Likely reasons for the lack of research include the following. There is the problem of reliable measurement of personality. Also the likelihood of symptomatology which is present in an individual being confounded with traits, which may be part of the personality. And finally there is the possibility of circularity, such as suicidal behaviour contributing to the diagnosis of borderline personality disorder. Furthermore, Casey (1989) made the point that previous research has generally failed to control for depression. The general expectation would be for there to be a positive relationship between suicidal intent and personality disorder. However Casey reported a new study which he conducted in which no link between personality disorder and levels of suicidal intent was found. Casey concluded that the notion of suicidal behaviour being trivial or merely a gesture in a personality disordered individual is therefore an *error*.

Perrah & Wichman (1987) noted that some findings have led to the interpretation that cognitive rigidity is a characteristic of some sort of 'suicidal personality'. Looking at a sample of adult attempters they concluded that if there is a suicidal personality, then rigidity is not a defining trait. An alternative explanation is that the rigidity which has been observed in people tested after an attempt (for example by Neuringer, 1976) could be due to the high level of stress that accompanies the crisis. That is, it may be a transient state which is too brief to be clinically useful in the assessment or prevention of suicidal behaviour. More research is required.

Given the apparent pertinence of personality to the development of suicidal behaviour according to Casey (1989), the question remains as to which direction to look for features which may be contributory. It is apparent that there is not a simple causal link between personality type and suicidal behaviour. A more likely scenario is that some personality features interact with eliciting stimuli along the complex chain of development of suicidal behaviour. Alexithymia (literally "no name for feelings") is a construct which is coming to be widely accepted as often involved in psychosomatic disorders. Many individuals who suffer psychosomatic disorders may be involved (not necessarily consciously) in self-destructive behavior, *possibly* due to their having little emotional awareness. A theoretical possibility then, is that some suicidal individuals may be unaware of their own personal danger due to an alexithymic lack of emotional awareness. Acklin & Alexander (1988) point out the "frequently observed association between alexithymia, sexual perversions, substance abuse disorders, and other acting out types of character pathology." It could be argued this might extend to attempted suicide, particularly those attempts sometimes labelled gestures. And, this might be a more frequent scenario for adolescents than young adults. Alexithymia does not appear to have been investigated in the context of suicide previously, but is part of the current study.

1-24 *Suicidal Behaviour- concept and measurement: the importance of intent.*

As should be clear from the above discussion (especially in section 1-2), any putative measure of suicidal behaviour should include the dimension of suicidal ideation, without which intentionality cannot be inferred. While it is clear that to behave in a suicidal manner one necessarily experiences suicidal ideation, a further obstacle to the measurement of such behaviour lies in the controversy regarding the existence (or non-existence) of a *continuum* of 'suicidality'. It may be that there are discrete types of suicidal behaviour, for example the categories above, and that these categories have quantum differences. Or it may be that suicidal behaviour is represented by a continuum of severity beginning with the idea and ending with a completed act. The conceptual base for suicidal behaviour which is used has obvious implications for both measurement and analysis of results. A review of putative measures of suicidal behaviour is presented below, along with a discussion of the conceptualization of suicidal behaviour upon which the current study is predicated.

1-25 *Putative Measures of Suicidal Behaviour.*

A review of recent literature suggests there are at least nine instruments in use for measuring suicidal behaviour. Some of these have been constructed from an explicit conceptual basis; others do not state the conceptual basis of the scale.

(1) *Death/Suicide Interview* for children and adolescents

Example of use: Carlson, Asarnow & Orbach (1987), to investigate developmental aspects of suicidal behaviour in children. Elicits knowledge of suicidal means, suicidal ideation, and suicidal attempts. No temporal distinction for ideation or attempts is made. Conceptual basis not explicit.

(2) *Suicidal Feelings* (Paykel et al., 1974).

Originally designed for a prevalence study. Inquiry is made as to the experience in the last year of five suicidal phenomena, four of them suicidal feelings (i.e., ideation) of differing intensity, the fifth a suicidal attempt. Petrie et al., (1988) used a modified version to assess suicidal ideation.

(3) *Zung Index of Potential Suicide*

The Suicide Behaviour Subscale (e.g. used by Petrie & Chamberlain, 1983; Strosahl et al., 1984) includes items on the number of previous attempts, knowledge of another's suicide, suicidal ideation, and the projection of suicidal ideas and actions. Conceptual basis not explicit.

(4) *Parasuicidal Behaviours Questionnaire*

Example of use: Chiles et al., (1985) to categorize individuals into not suicidal, current ideators and current attempters groups. Uses three questions relating to attempts, ideation and likelihood. No conceptual basis presented.

(5) *Suicidal Behaviours Questionnaire*

Developed by Marsha Linehan (1981). Uses four questions to rate the frequency of suicidal behaviours: plans/attempts, ideations, threats, and likelihood. Linehan & Nielsen (1981) suggested this scale measures suicidality, and Bonner & Rich (1987) found it measured a continuum of suicidal behaviours.

(6) *Suicidality Scale (Brent et al., 1986)*

This scale was specifically constructed to test for evidence of a hierarchy of suicidal ideation. It consists of a Guttman scale pertaining to suicidal ideation along a dimension of severity ranging from nonspecific, through specific, to attempts. Brent et al. reported findings confirming the existence of a hierarchy of suicidal ideation, at least for children and adolescents.

(7) *Spectrum of Suicidal Behaviour Scale* (Pfeffer et al., 1979, 1980, 1982, 1984; in Pfeffer et al., 1988).

This instrument defines and measures the severity of recent suicidal behaviours: ideas, threats, and both mild and serious attempts. According to Pfeffer et al., (1988) it concurs with other reports that have demonstrated a continuity of suicidal risk as a function of suicidal ideation, suicidal threats, and suicidal acts.

(8) *Beck Suicidal Intent Scale* (Beck et al., 1974)

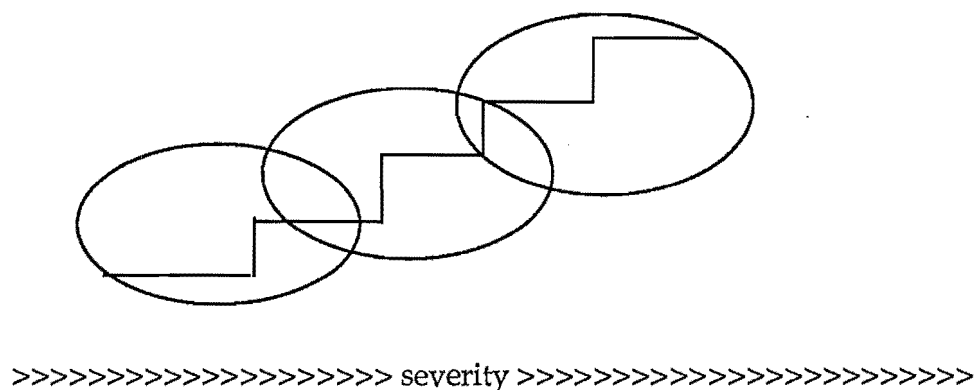
Intent Scale for suicide attempters.

(9) *Beck Scale for Suicide Ideation* (Beck et al., 1979)

Intent Scale for suicide ideators.

Both Beck scales are based on the concept of tripartite classification of individuals into completed suicides, suicide attempters, and suicide ideators.

They reported that severity of suicidal intent was more closely related to a lack of discrepancy between the wishes to live and die than to the absolute magnitude of the wish to die. Further analysis of this kind of cognitive-existential approach to suicidology would be premature at the present time. However, the author would like to hypothesise that this kind of underlying existential conflict, when *potentiated* by any or all of the complicating dimensions listed above, leads to a possibly large change in suicidal behaviour. For this reason suicidal individuals appear to fall into discrete categories, when in truth there is an underlying continuum. Graphically then the proposed model would be as follows, with each 'step' as a point of potentiation for the underlying existential 'conflict':



Of course this is not to say that potentiation always occurs. In reality this is likely to be highly ideosyncratic in occurrence, and dependent on contextual circumstances for the individual.

The implications for measurement of suicidal behaviour are, that it is important to ascertain not only the severity of the class of behaviour, but also the severity of behaviour within that class. The issue of measurement is of central methodological importance. As Berman & Carroll (1984) have observed the great majority of studies do not bother to evaluate subjects differentially by intentionality.

1-27 *Current Study - measurement of suicidal behaviour.*

As the above discussion implies, it is inappropriate merely to categorize

subjects using retrospective judgement. Also, because of the subjective nature of the experience of intentional phenomena, it was decided that a questionnaire, to be self-rated by subjects, was most appropriate. Four questions were chosen based on Linehan's & Nielsen's (1981) Suicidal Behaviours Questionnaire as reviewed above. The rating scales used by Cole (1988) were adopted. The questions are as follows: "Have you ever seriously considered or attempted to kill yourself?"- Rated on a 6 point scale. "How often have you thought about killing yourself in the past year?"- Rated on a 5 point scale. "Have you ever told someone that you were going to commit suicide, or that you might do it?"- Rated on a 3 point scale. "How likely is it that you will attempt suicide someday ?"- Rated on a 5 point scale. A copy of the questionnaire, as presented to subjects is in Appendix 3.

1-28 *Hypotheses to be Investigated in the Current Study.*

From the point of view of a psychological model there are at least two specific questions to ask regarding suicidal behaviour:

(a) why is there a sudden rise in first-ever attempts at suicide during adolescence?

(b) what psychological variables predispose an individual to engage in suicidal behaviour?

Firstly then, what might explain the sudden rise in suicidal behaviour found in adolescents? That is, a psychological explanation needs to account for the rarity of pre-pubertal suicidal behaviours, and also the continuing increase in rates of suicide that persists for the whole of adult life.

One way to approach these issues is to examine suicidal behaviour *across different age ranges*, with reference to several psychological variables. By so doing it may be possible to identify factors which are particular to the onset of adolescent suicidal behaviour. And also, factors which may assist in the *prediction* of, and thus primary prevention of, youth suicides.

In an attempt to answer this question of why there is a sudden rise in first-ever suicide attempts at adolescence, the following hypotheses are to be tested:

HYPOTHESIS 1: that peer-related concerns in comparison to family concerns

will be amplified for some adolescents' suicidal behaviour compared to other age groups. That is, it is hypothesised that suicide ideators will attach more importance to peer-related concerns, than suicide attempters; and, that those peer-related concerns are likely to outweigh concern about one's family, especially during adolescence.

A suitable instrument to investigate this hypothesis is the Reasons For Living Inventory. Linehan et al (1983) developed this questionnaire after noting that little attention had been given to the question of whether suicidal persons lack important *adaptive* characteristics, as opposed to focusing on maladaptive attributes. Therefore this scale is based on the premise that the content of (cognitive) belief systems can be used to differentiate suicidal from nonsuicidal persons. Despite its promise it appears that so far no work has been done on adapting the scale for use with all ages. The original scale comprises 47 items, including a subscale of 3 items called Child-related Concerns which Linehan et al found to discriminate between ideators and suicide attempters. A partial intention of this research then is to attempt a validation of the scale on a New Zealand population, and to substitute the Child-related Concerns subscale with a Peer-related Concerns subscale, thereby making the instrument useful for all ages.

HYPOTHESIS 2: that suicide attempters may use different ways of coping in stressful encounters than suicide ideators and/or threateners. There is some evidence that ways of coping may differ between middle-aged and elderly individuals, so a reasonable sub-hypothesis is that ways of coping may differ by age in adolescents who behave suicidally.

HYPOTHESIS 3: that suicide attempters will score more highly on a measure of alexithymia than ideators and/or threateners.

Alexithymia (literally "no name for feelings") is a construct which is coming to be widely accepted as often involved in psychosomatic disorders. Bagby, Taylor & Atkinson (1988) suggested that the Toronto Alexithymia Scale is currently the best instrument for measuring the alexithymia construct. Alexithymia does not appear to have been investigated in the context of suicide previously.

The second specific question asks what psychological variables may predispose an individual to engage in suicidal behaviour? Identification of such variables has clinical value in primary prevention by helping to identify high risk *individuals* ; which is a much more difficult task than the identification of high

risk groups

Primary prevention of suicidal behaviour can be very expensive in terms of clinicians time, so the elucidation of any predictive factors, or combination of factors, could be cost-effective. Multiple regression is an excellent technique for this, especially in terms of combined contributory factors, since it helps to quantify the relative unique contributions of each factor.

Variables to be measured and used in the investigation of predictive factors include age, sex, reasons for living, coping style, social desirability, alexithymia, hopelessness, and depression. The particular instruments used are discussed below.

Chapter 2

Method

2-1 Procedure.

Two strategies were pursued for data collection:

(i) the researcher sat in on the initial Crisis Intervention interview. In the case of medical admissions this was most commonly either in the Washout Room of the Emergency Department of the hospital, in the Intensive Care Unit, or on the Ward. For non-medical presentations initial interviews took place, either in an interview room in the Department of Psychological Medicine, St Andrews Outpatient Clinic, which is the Crisis Intervention Team's base. During this initial interview most of the data reported under "Characteristics of the Subjects" (see Results section below) was collected. At the end of the interview, the individual was asked if he or she would be interested in participating in the research.

(ii) on those occasions (approximately ten percent) when it was not possible to be present during the initial interview, the researcher made the initial contact with the individual after a therapeutic session when they were asked to participate. For these subjects an extra history taking, information gathering interview was necessary. This was done immediately before the questionnaires were filled out.

Data collection itself had to proceed in a flexible fashion, dependent on the needs of individual cases, especially medical needs. For example, some individuals were initially contacted in the Washout room immediately after a gastric lavage and were not feeling well enough to be interviewed until later. Similarly some of those admitted to the Intensive Care Unit were either not conscious, insufficiently awake, or too scared for an immediate interview.

Once potential subjects were contacted, they had explained to them what was involved and, in brief, the reasons for the research. Once subjects agreed to participate they were asked to sign an Informed Consent form (see Appendix 2). Subjects were then asked to fill out the questionnaires. The researcher placed an immutable priority on non-interference with those medical, psychiatric or psychological interventions considered necessary by medical and therapeutic staff.

2-2 Administration of Questionnaires.

In order to reduce the possibility of order effects the order of presentation of questionnaires was varied. The only rule placed on order was that the questions relating to Suicidal Behaviour were never placed at the beginning, or at the end. All questionnaires were stapled together making the order fixed at the time of presentation to the subject. The Informed Consent form was attached to the front of each set of questionnaires so that it was always signed first.

2-3 Measurement Instruments.

Copies of the questionnaires are in Appendix 3.

2-3.1 Reasons For Living Inventory (RFL) is a questionnaire based on the premise that the content of (cognitive) belief systems can be used to differentiate suicidal from nonsuicidal persons. This instrument focuses on important adaptive characteristics that may be lacking, rather than on maladaptive attributes. Linehan, Goodstein, Nielsen & Chiles (1983) gathered 343 reasons for living from a broad sample of individuals. These were reduced to 72 statements which were presented to two different samples for rating, and then subjected to principal-component factor analysis with orthogonal varimax rotation. Six distinct clusters

of reasons for living emerged, and 47 items had unambiguous factor loadings greater than .50. The Reasons For Living Inventory then consists of 47 items and has the following six subscales: Survival and Coping Beliefs, Responsibility to Family, Peer-Related Concerns (originally Child- related concerns, which is unsuitable for use with young people), Fear of Suicide, Fear of Social Disapproval, Moral Objections. The items are rated on a six point scale, from 'not important at all' to 'very important'. The original Child- Related Concerns subscale contained the following three items:

- (i) The effect on my children could be harmful
- (ii) It would not be fair to leave the children for others to take care of
- (iii) I want to watch my children as they grow

In order to make the instrument suitable for use with all ages the Child-Related Concerns subscale was replaced with one nominally called Peer- Related Concerns. The following three items were used:

- (i) The effect on others my age could be harmful
- (ii) It would not be fair to leave others my age behind
- (iii) I want to watch those my age as they grow older

Linehan et al., (1983) reported estimates of internal consistency for each subscale using the Cronbach Alpha statistic, indicating moderately high internal reliability with scores ranging from 0.72 to 0.89.

RFL was scored on a Microsoft Works spreadsheet by making use of the calculation functions. The mean response (rated as 0 to 5, on a 6- point scale) was calculated to 2 decimal places for each of the six subscales. Possible scores for an individual subject therefore ranged between 0.00 and 5.00. on each subscale.

2-3.2 Social Desirability (SD). The Marlowe-Crowne social desirability Scale (MCSDS, Crowne & Marlowe,1960) is based on the premise that some individuals display a social-desirability response set, depicting themselves with the most socially favourable self-description. Social desirability scales then purport to measure the propensity to respond in a socially desirable manner. The Marlowe-Crowne social desirability Scale contains 33 items. These questions are answered 'true' or 'false'. Crowne & Marlowe (1960) considered it was essential to be able to differentiate the effects of item content and the needs of subjects to present

themselves in a socially desirable, or undesirable, light. Because the test items in the Edwards Social Desirability Scale (ESDS) were selected from the Minnesota Multiphasic Personality Inventory (MMPI), Crowne & Marlowe (1960) argued that it had psychopathological implications. They developed their scale to be a content-independent measure of social desirability response style. In fact the scale is modelled on the MMPI L scale.

Crowne & Marlowe (1960) reported an internal consistency (Kuder-Richardson) coefficient of 0.88, and a test-retest correlation of 0.89, for a sample of college students. Tanak-Matsumi & Kameoka (1986) reported a coefficient alpha of 0.79 for the MCSDS, and a correlation between the ESDS and the MCSDS of 0.37 ($p < .001$). In contrast to the ESDS's strong association with a variety of standard anxiety and depression measures, the correlations between the MCSDS and the measures of depression and anxiety were quite low (eg from $r = .19$ with Zung-A; Zung, 1971; to $r = .30$ with "trait" anxiety from the Spielberger State-Trait Anxiety Inventory; Spielberger et al., 1970). Further discussion of the MCSDS was made in section 1-20 above.

MCSDS was scored by making use of a template, with those responses keyed in the positive (i.e. socially desirable) direction being counted as 1, and all other scores as 0. Total score was the sum of these responses. An error in printing the questionnaire occurred, leading to the omission of item seven from the original scale. However, for the purposes of this study it makes no practical difference, since the scores are being used in a correlational analysis, and not being compared in a quantitative sense to any norms. Total possible scores therefore ranged from 0 to 32.

2-3.3 Beck Depression Inventory (BDI) is a self-report instrument designed to measure depressive symptomatology. The BDI contains 21 items, which consist of a group of four statements. The respondent has to choose which one best represents feelings at that time. The BDI is widely considered to have sound psychometric properties (Carson, 1987). In a recent review of 25 years of evaluation of the BDI, Beck, Steer & Garbin (1988) reported on these properties. Internal consistency (from 25 studies) produced mean coefficients alpha of 0.86 in psychiatric samples, and 0.81 in nonpsychiatric samples. The BDI shows

consistently high correlations with other self-report depression instruments. The concurrent validity with respect to clinical ratings were also high, for example a mean correlation of 0.73 with Hamilton Psychiatric Rating Scale for Depression. Steer et al., (1986) also found that all of the symptoms listed in the BDI showed higher mean scores in depressive and dysthymic patients than generalized anxiety disordered patients, except for weight loss and somatic preoccupation. It seems likely then that one reason for the positive relationship between measures of anxiety and the BDI is that both syndromes share common somatic symptoms.

In researching suicidal behaviour therefore, the BDI is currently the most suitable instrument. The fact that it has been usually used in previous research is also advantageous since it makes comparison across other variables more possible.

BDI was also scored by template. Total score is the sum of scores allotted to each statement chosen by the respondent. Possible scores range from 0 to 63.

2-3.4 Beck Hopelessness Scale (BHS). This scale is designed to quantify hopelessness which is identified as one of the core characteristics of depression (Beck, Weissman, Lester & Trexler, 1974). It contains 20 items which are answered 'true' or 'false'. Hopelessness can be defined in terms of a system of negative expectancies concerning oneself and one's future life (Stotland, 1969). In order to facilitate the study of hopelessness in various psychopathological conditions, Beck constructed an instrument designed to reflect the respondent's negative expectancies. Beck, Weissman, Lester & Trexler, (1974) reported a coefficient alpha of 0.93 (reliability coefficient of internal consistency). The item-total correlations ranged from 0.39 to 0.76 (all significant at the .01 level). The correlation with the pessimism item of the BDI was 0.63 ($p < .001$). The scale was found to load onto three factors after principal-component factor analysis with varimax rotation. These three factors tapped affective, motivational and cognitive aspects.

BHS was also scored by template, with those responses keyed in the positive (i.e. hopeless) direction being counted as 1, and all others as 0. Total score was the sum of these responses, and the possible range was 0 to 20.

2-3.5 Ways of Coping Questionnaire (WCQ) is a structured protocol containing 50 items which is used to elicit self-report information about the most stressful encounter the subject had experienced during the previous week. This scale is a revision of an earlier Coping Questionnaire and was reported in detail by Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, (1986). It does not appear previously to have been investigated as a possible source of clinical prediction of suicidality. There are eight subscales providing separate scores as follows: Confrontive Coping, Distancing, Self- Controlling, Seeking Social Support, Accepting Responsibility, Escape-Avoidance, Planful Problem-Solving, Positive Reappraisal. A four point scale is used for responses, ranging from 'does not apply' to 'used a great deal'. Folkman et al., (1986) reported on a final principal factor analysis (subsequent to exploratory factor analysis) which yielded the eight factors. Alpha coefficients ranged from 0.61 to 0.79 for the subscales.

WCQ was scored on a Microsoft Works spreadsheet by making use of the calculation functions. The mean response (rated as 0 to 3, on a 4- point scale) was calculated to 2 decimal places for each of the eight subscales. Possible scores therefore ranged between 0.00 and 3.00, on each subscale.

2-3.6 Toronto Alexithymia Scale (TAS) is a self- report measure of the alexithymia construct. The 26-item scale developed by Taylor et al., (1985) yielded a coefficient alpha of 0.79 and test-retest reliabilities of 0.82 (one week) and 0.75 (five weeks). Factor analysis of the scale produced a four-factor solution which is congruent with the alexithymia construct (Bagby et al., 1988). The four factors were: ability to describe feelings, ability to identify and distinguish between feelings and bodily sensations, daydreaming, and externally-oriented thinking.

TAS was scored by using a template. Twelve of the items are scored positively (i.e. in the 'more alexithymic') direction, and fourteen in the opposite direction. For these fourteen items the numerical weighting of the scale (1 to 5, on a 6- point scale) was reversed. The total score was the sum of all responses, with a possible range of 26 to 130.

2-3.7 Suicidal Behaviour Measure (which is to be used as the dependent, or criterion, variable in the analysis of the data) was measured by the use of the following questions (Cole, 1988):

Have you ever thought about or attempted to kill yourself?rated on a 6-point scale.

How often have you thought about killing yourself in the past year?.....rated on a 5- point scale.

Have you ever told someone that you were going to commit suicide, or that you might do it?.....rated on a 3- point scale.

How likely is it that you will attempt suicide someday?.....rated on a 5-point scale.

Five scores were generated from these four questions. A 'global' Suicidal Behaviour (SB) score was achieved by summing the score to all four items. Note item four is the only one keyed negatively. That is the numerical score is smaller for the more 'suicidal' response. Consequently for scoring the numerical values were reversed. Possible range for SB was thus 4 to 19.

Besides the SB score each item was scored individually, providing four further scores which were termed SBQ1, SBQ2, SBQ3, and SBQ4.

Chapter 3

Results

3-1 *Sample.*

34 subjects (14 male, 20 female) were interviewed and asked to respond to the questionnaires. All 35 patients who were asked to participate in the study agreed to take part, however one person failed to complete the questionnaires, hence the 34 subjects. These individuals were recruited to the study after presentation to the Crisis Intervention Team at Christchurch Public Hospital over a period of nine weeks (between 4/7/89 and 1/9/89).

During this period there were 57 presentations with a 'suicide attempt', of whom 24 (i.e., 42%) were interviewed. There were 37 presentations of individuals with prominent 'suicidal ideation, plans or threats', of whom 9 (i.e. 24%) were interviewed for the study. A further 3 potential subjects were made unavailable due to being sent to Ferguson Clinic, Sunnyside Hospital under committal papers (e.g., Section 19). There were two reasons why some potential subjects were not interviewed: (i) some presentations to the Emergency Department of the hospital occurred at night or during the weekend, and patients were seen by the first on call Crisis Team member, hence being recorded as a contact. The researcher, a team of one, could not be available all the time, hence some (approximately 30%) were missed. Furthermore, several of these individuals failed to arrive for scheduled follow-up appointments (during working hours), therefore precluding the opportunity of being asked to take part in the study. (ii) on some occasions presentations, suitable for the study, occurred simultaneously so the researcher could not reach both.

Time elapsed between suicidal behaviour and the responses to

questionnaires was variable. The time of presentation for 'ideators', and the time of overdose/ self-poisoning/ laceration for 'attempters' was recorded as accurately as possible. All but 6 of the subjects responded to questionnaires within 48 hours (which compares favourably with other research, for example, Linehan, Goodstein, Neilsen & Chiles, 1983). The average time elapsed was 35.6 hours. All data was collected by the author.

3-2 *Characteristics of Subjects.*

The 34 subjects had the following characteristics: There were 14 males and 20 females. Calculated to completed years and completed months (expressed as decimals) the Mean age = 27.9 years, Standard Deviation= 11.17 years, Range= 13.0 to 54.9 years. Ethnic origin as described by the individual: the sample contained 32 Caucasians, 1 Maori, and 1 Samoan. Seven of the 34 subjects had made previous attempts.

3-3 *Reason for Presentation to Crisis Intervention Team.*

Subjects were in 4 categories. Namely overdose (8 males, 14 Females), self-poisoning (1 male, no females; the single case seen used Boracure), slashed-wrist (no males, 2 females), and suicidal ideation (5 males, 4 females). The sample contained 25 'suicide attempters' (73.5% of sample) and 9 'ideators' (26.5% of sample). Table 2 presents these results.

Table 2. Reason for Presentation

Presentation reason	Males	Females	Total	Percentage of Total
Overdose	8	14	22	64.7
Self- poisoning	1	0	1	2.9
Slashed- wrist	0	2	2	5.9
Suicidal ideation	5	4	9	26.5
	N=14	N=20	N=34	

3-4 Overdoses- Method Used.

The type of drug used (when known) can be classified into three types (by reference to New Ethicals Catalogue). Namely psychoactive drugs (5 males, 7 females), paracetamol- type (1 male, 4 females; including Disprin to make a 'household' type), and others (2 males, 3 females). The group of 'household'/paracetamol-type overdoses is reported separately because of its relatively large contribution (22.7% of the sample). Table 3 presents these results.

Table 3. Method of Overdose

	Male	Female	Total	Percentage of Total
Psychoactive Drugs	5	7	12	54.6
'Household'- type (Paracetamol/Disprin)	1	4	5	22.7
Other/ not known	2	3	5	22.7
	N=8	N=14	N=22	

3-5 Precipitants to Presentation to Crisis Intervention Team.

Reasons given by patients as their most prominent precipitant to presentation could probably be classified in a variety of ways. The following table is based on categories identified by Baker (1988), in a study of suicide attempters in New Haven, USA. Table 4 presents these results.

Table 4. Precipitants to Presentation

Precipitants	Male	Female	Total	% of Total
Difficulty with Family Relationship(s)	3	6	9	26.47%
End of Relationship,Argument	5	4	9	26.47%
Therapeutic Relationship	0	1	1	2.94%
Multiple Precipitants	1	1	2	5.88%
Work	1	0	1	2.94%
Financial	1	1	2	5.88%
Depression, long history	1	3	4	11.76%
Alcohol	2	0	2	5.88%
Unknown	0	4	4	11.76%
	N=14	N=20	N=34	

3-6 Previous Psychiatric Diagnosis.

This information came from the individual, but where possible was validated from Crisis Team records. One individual had more than one diagnosis (it is assumed these were on Axis I of DSM-III). In this case it was a combination of major depression, alcohol abuse, and substance abuse. Table 5 presents these results.

Table 5. Previous Psychiatric Diagnosis

Diagnosis	Male	Female	Total
Major Depression		3	3
Manic Depression		2	2
Alcohol Dependence	4		4
Personality Disorder	1		1
More than 1 Diagnosis (axis 1)	1		1
(Total)	(6)	(5)	(11)

3-7 Multiple Regression Analysis of Suicidal Behaviour.

One of the main concerns of clinicians is the prediction of clinical events (Neufeld, 1977). In order to approach achievement of this goal it is necessary for a clinician to think in a multivariate manner, weighing the contributions of several predictor variables toward a criterion variable. Theory and research provide knowledge and insight into likely predictor variables, which can then be measured or assessed, using known or estimated norms or standards. Criterion variables may be membership of a class or group (for example, diagnostic category), or, level or intensity of membership of that class or group. An example of the first kind of criterion variable is whether or not an individual belongs to the group described by a label, such as frontal lobe dysfunction. The second kind of criterion variable may be exemplified by the question of whether an individual belongs to the group of mild, moderate or severely impaired frontal lobe functioning.

Theory and/or past research may have posited several factors to be studied H, I, J, K and so on, as likely 'contributors' to a criterion state, most commonly labelled as Y. A researcher could use multiple, single-paradigm studies. However,

in so doing he or she runs the risk of missing the complexities of relationships, which are characteristic of behavioural science.

For the prevention of any behaviour it is rudimentary that some level of prediction be possible. As Diggory (1974) pointed out to be seriously concerned with suicide prevention entails a task that is more challenging than any which most psychologists have undertaken, that is, the task of predicting which persons will exhibit a highly specific, very infrequently occurring behaviour. Considerable research effort has been expended on demographic factors associated with suicide. At least part of the reason for the large number of studies focusing on demographic, and diagnostic variables, may lie in the simplicity of acquiring such information from hospital and/or coroner's files, without the need to have direct contact with the subjects themselves. Diggory (1974) presented cogent arguments for the limitations of demographic data to both our understanding, and (possible) prediction of suicidal behaviour. Furthermore, he pointed out that the presence of special conditions such as general mental illness, of specific conditions such as depression, do not offer immediate prospect of making satisfactory predictions either. The large number of false positives (possibly 90 % or greater) renders such a detection scheme near useless. Diggory then argued that until we have thoroughly explored the power that Multiple Regression Analyses (MRA) have for improving prediction of suicidal behaviours, we have no grounds for deciding either that the idea of prediction is a realistic goal or a 'will-o-the-wisp'. Petrie et al., (1988), using multiple regression and the related discriminant function analysis, concluded that their data indicates that psychological variables offer considerable advantage over previously identified demographic factors in identifying repeaters. In fact, since 1974 when Diggory presented his case for MRA, there has been considerable research published which utilizes this technique. One of the major advantages being that it is essentially open-ended, in contrast to the orthogonal variable Fisherian methods. Additional variables can be measured on an existing set of subjects to see whether predictive power has been gained.

It is important to note that complexity arises in departing from the orthogonality of factors made possible by manipulative experiments. In the case of suicidal behaviour the sheer multiplicity of research factors, *and the effect of relationships among them*, makes for an important type of complexity. Factors which impinge on the criterion variable of suicidal behaviour, are most likely to be inter-correlated also. This is the phenomenon described by Cohen & Cohen

(1983) as redundancy among correlated explanatory variables.

Suicidal behaviour is not accessible to true experiments, for obvious reasons. Therefore research can only be performed by systematic observation of the phenomena as they occur in natural settings. MRA's ability to assess unique variance contributed by factors, and the related measures of regression coefficients and partial correlations, makes it eminently suitable as a tool for observational (i.e., non-experimental) studies. As a general statistical technique, MRA can be viewed as both a *descriptive* and an *inferential* tool. In order to utilize MRA in the building of prediction models of suicidal behaviour, it needs to be employed in both these roles. First, as a descriptive tool by which the relationship between a criterion variable and a set of predictors is analysed *for a particular sample*. Then, after the necessary process of replication in several other samples, as an inferential tool by which relationships *in the population* may be estimated.

Sometimes MRA is termed multiple *linear* regression analysis, which serves as a reminder that multiple regression equations are indeed, linear. In studying suicidal behaviour we are almost certain to encounter some curvilinear relationships. It is important to note that MRA places no constraint on the *nature* of the variables (Cohen & Cohen, 1983). In fact they can be any shape at all, and still be described by a linear multiple regression equation.

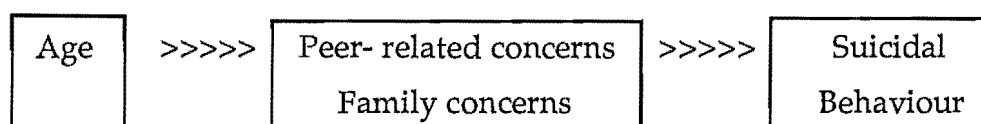
3-8 Analysis of Results.

The analytic strategy contains two parts:

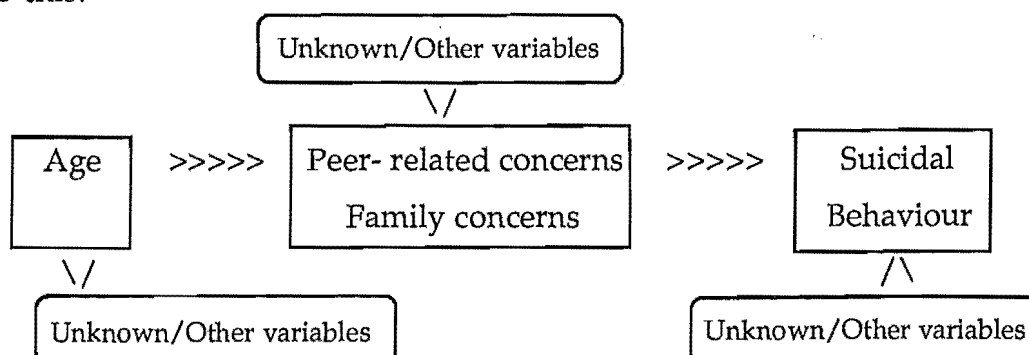
- * Testing the hypotheses.
- * Attempting to elucidate causal factors of suicidal behaviour from the data set.

3-9 Testing the Hypotheses.

HYPOTHESIS 1- proposed that age would produce a differential effect on peer-related concerns and family concerns, and that this difference would impinge on suicidal behaviour. Peer- related and Family concerns were measured by subscales of the Reasons For Living Inventory (RFL), which was adapted as discussed above.



Since Sex is a variable as inherent to subjects as Age (that is one is born with a value on these variables), it makes sense to include it in the analysis. Age and Sex are both exogenous variables (as defined by Cohen and Cohen, 1983) in this model. That is, they are not caused by any other variable in the putative model. They may however, 'cause' other or unknown variables. Peer- related and Family concerns may also have unknown or other variables impinging on them. This is true for Suicidal Behaviour as well. Thus the model to be tested looks something like this:



3-9.1 Results relevant to Hypothesis 1:

The variables Sex and Age were entered into two multiple regression analyses with (i) peer-related concerns measured by the Reasons For Living Inventory, Peer-related concerns subscale as the criterion variable; and (ii) family concerns measured by the Responsibility to family subscale of the same inventory as the criterion variable. The results of the first equation are in Table 6, and the second in Table 7. The multiple regression analyses show that neither Age nor Sex was significantly related to either Peer- related ($R^2 = .014$; $F = 0.221$; $df = 2, 31$; $p = .803$), or Family concerns ($R^2 = .079$; $F = 1.328$; $df = 2, 31$; $p = .280$).

Table 6. Sex and Age as predictors of peer-related concerns. Regression results.

VARIABLE	simple r	B	Beta	t	p
Sex (male=1, female=2)	-.115(n.s.)	-0.401	-0.118	0.66	n.s.
Age	.016(n.s.)	0.004	0.029	0.16	n.s.
(Constant)		(2.476)			

$R^2 = .014$

$F = 0.221$ $df = 2, 31$ $p = .803$

Table 7. Sex and Age as predictors of family concerns. Regression results.

VARIABLE	simple r	B	Beta	t	p
Sex (male=1, female=2)	.279(n.s.)	0.862	0.275	1.584	n.s.
Age	.066(n.s.)	0.005	0.036	0.209	n.s.
(Constant)		(1.494)			

$R^2 = .079$

$F = 1.328$ $df = 2, 31$ $p = .280$

In order to look at the possible effects of age by grouping subjects into 'developmentally-appropriate' bands, analyses of variance and then t-tests were performed to compare the Family and Peer- related subscales. Subjects were combined into age groups, as used by the National Health Statistics Centre (personal communication), and Antoniadis (1988). These were 10- 19, 20-29, and 30+ years. For the purposes of labelling these were translated into "Adolescents", "Young Adults", and "Middle Aged" respectively. The 30+ age group could not be further sub- divided due to lack of numbers.

Analysis of variance main effects results revealed that there were not significant differences in responses by developmental age group ($F = 3.145$, $df = 2, 31$,

$p = .057$). However, there were significant differences in mean responses to the RFL Family and Peer-related subscales ($F = 14.253$, $df = 1, 31$, $p = .0006$). The interaction was not significant ($F = 1.871$, $df = 2, 31$, $p = .1709$). These results are presented in Table 8 (a). Because of the significant main effect by subscale it was decided to perform t -tests for the means of each subscale by age group. As measured by the Reasons For Living Inventory, both Adolescents, and Young Adults showed a weak, but *not* significant, tendency to report family responsibility as greater than peer concerns. For Adolescents the mean ratings were 3.615 and 2.667 for family and peer-related concerns respectively; and $t = 1.689$, $df = 9$, $p = 0.1255$. For the Young Adults the mean ratings were 1.842 and 1.5 for family and peer-related concerns respectively; and $t = 1.424$, $df = 9$, $p = 0.1882$. However, Middle Aged subjects reported a *significantly* greater tendency, in the same direction. That is, for the Middle Aged subjects family is a more important reason for living than peers with mean ratings of 3.398 and 1.786 respectively; and $t = 3.227$, $df = 13$, $p = .0066$. These results are presented in Table 8 (b) and Figure 5.

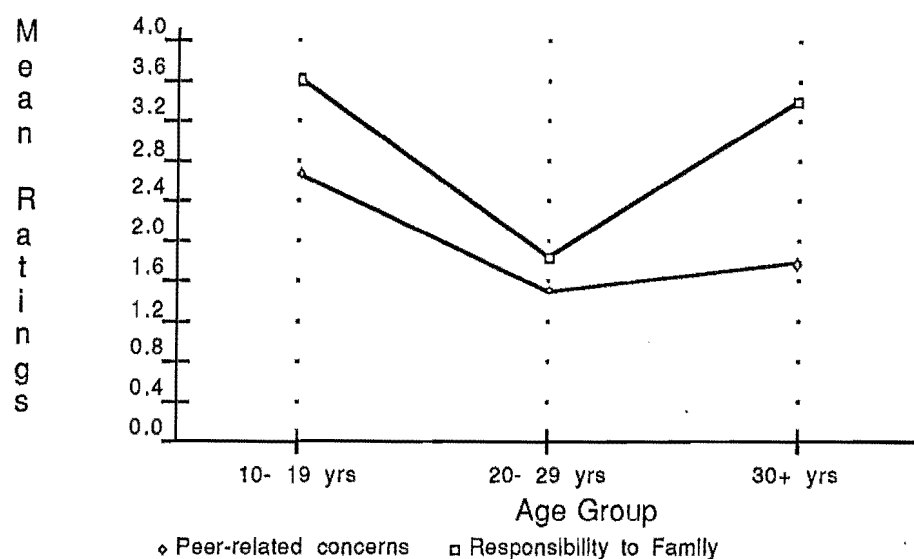
Table 8 (a). Analysis of variance results for three developmental age groups by two reasons for living subscales (peer- related and family concerns).

	df	Sum of Squares	Mean Square	F-test	Probability
Age Group (A)	2	22.18	11.09	3.145	0.057
Subjects w. groups	31	109.269	3.525		
RFL subscale (B)	1	18.49	16.491	14.253	0.0006
A X B	2	4764	2.382	1.871	0.1709
B X Subjects w. groups	31	39.464	1.273		

Table 8 (b). Means and standard deviations of Peer- related and Family subscales of Reasons For Living Inventory by age group, and t -tests.

Age Group	Reasons For Living Peer-related concerns	Reasons For Living Responsibility to Family	t	p (two-tailed)
10- 19 yrs	Mean 2.667	3.615	1.689	0.1255
N=10	s.d. 1.414	1.107	(df=9)	
20- 29 yrs	Mean 1.5	1.842	1.424	0.1882
N=10	s.d. 1.792	1.559	(df=9)	
30+ yrs	Mean 1.786	3.398	3.227	0.0066
N=14	s.d. 1.758	1.487	(df=13)	

Figure 5. Mean ratings of Peer- related and Family subscales of Reasons For Living Inventory plotted against age group.



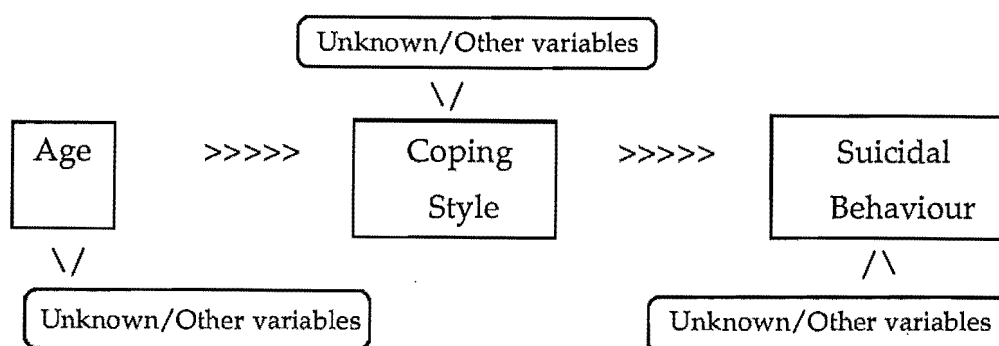
The Peer- related and Family RFL variables were then entered into another multiple regression analysis with Suicidal Behaviour (the 'global' score from all four questions) as the criterion variable. The results are presented in Table 9. Neither variable was a significant predictor of suicidal behaviour ($R^2 = .066$; $F = 1.094$; $df = 2, 31$; $p = .348$). Furthermore, performing multiple regression analyses on each of the four component questions of the suicidal behaviour measure did not produce significant results either.

Table 9. Peer-related and Family subscales of the Reasons For Living Inventory as predictors of suicidal behaviour. Regression results.

VARIABLE	simple r	B	Beta	t	p
Peer-related concerns	-.139(n.s.)	-0.032	-0.015	0.074	n.s.
Responsibility to Family	-.256(n.s.)	-0.592	-0.249	1.244	n.s.
(Constant)		(14.372)			

$R^2 = .066$ $F = 1.094$ $df = 2, 31$ $p = .348$

HYPOTHESIS 2- suggested that coping style, as measured by the Ways of Coping Questionnaire (WCQ), would produce a differential effect on suicidal behaviour. Also as an (exploratory) sub- hypothesis that age would impinge on coping style. Applying the same logic as for Hypothesis 1, the model to be tested is as follows:



3-9.2 Results relevant to Hypothesis 2:

The only coping subscale which correlated significantly with Age was Positive Reappraisal, WCQ/8 ($r = .451, p < .01$). The variables Age and Sex were entered into eight multiple regression equations, with each of the eight subscales of the Ways of Coping Questionnaire as criterion variables. Neither Age nor Sex was a significant predictor of any of the coping subscales. Table 10 presents the Beta coefficients from each equation.

Table 10. Regression beta coefficients for Age and Sex as predictors of Ways of Coping Questionnaire (WCQ) subscales.

	WCQ/1	WCQ/2	WCQ/3	WCQ/4	WCQ/5	WCQ/6	WCQ/7	WCQ/8
Age	0.043	0.052	0.181	0.169	0.233	-0.09	0.247	0.463
Sex	0.031	-0.142	-0.066	0.016	-0.18	0.079	-0.092	-0.108

All coefficients were not significant

Therefore, there is no evidence from this sample that either Age or Sex affect ways of coping.

To test the central tenet of the second hypothesis (that coping style would produce a differential effect on suicidal behaviour) the eight subscales of the Ways of Coping Questionnaire were entered into a multiple regression with the 'global' suicidal behaviour measure as the criterion variable. Table 11 presents the result of this analysis. In this instance Planful- Problem Solving (WCQ/7) was found to be significantly related to suicidal behaviour.

Table 11. *Ways of Coping Subscales as predictors of suicidal behaviour (SBQ).*

VARIABLE	simple	r	B	Beta	t	p
Confrontive Coping	.207	(n.s.)	-1.586	-0.322	1.098	n.s.
Distancing	.113	(n.s.)	-1.367	-0.251	1.106	n.s.
Self- Controlling	.195	(n.s.)	-1.873	-0.303	1.203	n.s.
Seeking Social- Support	.168	(n.s.)	0.569	0.131	0.581	n.s.
Accepting Responsibility	.326	(n.s.)	-0.579	-0.115	0.384	n.s.
Escape- Avoidance	.270	(n.s.)	2.385	0.483	1.731	n.s.
Planful- Problem Solving	.461	(p<.01)	5.178	0.988	2.937	0.007
Positive Reappraisal	.155	(n.s.)	-2.054	-0.353	1.551	n.s.
(Constant)			(11.16)			

$R^2 = .362$

$F = 1.771$ $df = 8, 25$ $p = .131$

Note that the "overall" test for goodness of fit for the regression equation, the F test of multiple R is *not* significant ($F = 1.771$, $df = 8, 25$, $p = .131$). This implies the observed multiple correlation ($R = 0.602$) *may* be due to sampling fluctuation. However, another possibility is that the relatively large number predictor variables (eight) has caused loss of degree of freedom from the residual sum of squares at a faster rate than the degrees of freedom for the regression. That is this may be an artifact of the relatively small number of subjects. The data therefore provide only very *limited* support for hypothesis 2. However, it is important to note that the criterion variable being used is the 'global' suicidal behaviour score.

As a further test of the hypothesis four more multiple regression analyses were performed, using the eight coping subscales as predictor variables, and each of the four questions in the Suicidal Behaviour Questionnaire as the criterion variables. Questions 2, 3, and 4 produced non- significant results. Question 1 was significantly predicted by three of the subscales: Confrontive Coping, Escape-Avoidance, and Planful- Problem Solving. The results are presented in Table 12. Question 1 asks: "*Have you ever seriously considered or attempted to kill yourself?*" The overall test of goodness of fit for the regression equation nearly reached significance ($F = 2.153$, $df = 8, 25$, $p = .0683$). That is once again, these results may be due to sampling fluctuation or an artifact of small N.

Table 12. *Ways of Coping Subscales as predictors of suicidal behaviour*

Question 1: "Have you ever seriously considered or attempted to kill yourself?"

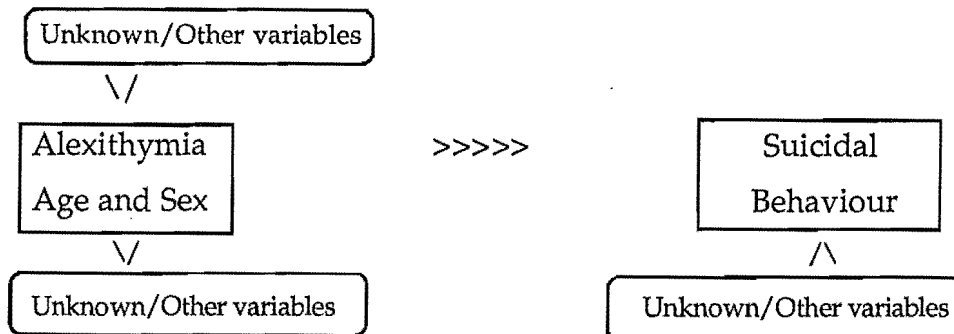
(Questions 2, 3, & 4 produced nonsignificant results)

VARIABLE	B	Beta	t	p
Confrontive Coping	-1.493	-0.67	2.376	<.05
Distancing	-0.042	-0.017	0.078	n.s.
Self- Controlling	-1.221	-0.438	1.802	n.s.
Seeking Social- Support	-0.291	-0.149	0.683	n.s.
Accepting Responsibility	-0.134	-0.059	0.204	n.s.
Escape- Avoidance	1.273	0.571	2.124	<.05
Planful- Problem Solving	2.231	0.942	2.909	<.01
Positive Reappraisal	-0.605	-0.23	1.05	n.s.
(Constant)	(3.848)			

$R^2 = .408$

$F = 2.153$ $df = 8, 25$ $p = .0683$

HYPOTHESIS 3- proposed that alexithymia, measured by the Toronto Alexithymia Scale (TAS), would be related to suicidal behaviour. The model to be tested looks something like this:



3-9.3 Results relevant to Hypothesis 3:

TAS scores correlated significantly with Beck Hopelessness Scale ($r = .357$, $p < .05$), and the Distancing, Self-Controlling and Escape-Avoidance subscales of the Ways of Coping Questionnaire ($r = .523$, $p < .01$; $r = .442$, $p < .01$; and $r = .514$, $p < .01$ respectively). Significant negative correlations were found between Toronto Alexithymia Scale and the Survival and Coping, and Peer-related concerns subscales of the Reasons For Living Inventory ($r = -.352$, $p < .05$; and $r = -.329$, $p < .05$ respectively). In order to test this hypothesis the alexithymia score, along with Age

and Sex were entered into a multiple regression analysis with suicidal behaviour (SBQ) as the criterion variable. No significant relationship was found for any of the variables ($R^2 = .004$, $F = .041$, $df = 3, 30$, $p = .989$). TAS score was found not to predict any of the four component questions of the suicidal behaviour questionnaire either.

3-10 Analysis of Possible Causal Factors of Suicidal Behaviour.

The correlation matrix of all variables is presented in Appendix 1. Those variables of immediate interest are ones which correlate significantly with suicidal behaviours. Table 13 presents a list of them:

Table 13. Variables which correlate significantly with suicidal behaviours.

Variable	Suicidal Behaviour Variable	Correlation	Probability
RFL Total	SBQ...Question 2	-.333	<.05
RFL /rf	SBQ...Question 2	-.401	<.05
RFL /fsd	SBQ Total	-.502	<.01
RFL /fsd	SBQ...Question 2	-.528	<.01
RFL /fsd	SBQ...Question 4	-.469	<.01
RFL /prc	SBQ...Question 4	-.376	<.05
WCQ Total	SBQ...Question 4	.403	<.05
WCQ /1	SBQ...Question 4	.420	<.05
WCQ /3	SBQ...Question 4	.329	<.05
WCQ /4	SBQ...Question 3	.329	<.05
WCQ /5	SBQ...Question 4	.449	<.01
WCQ /7	SBQ Total	.461	<.01
WCQ /7	SBQ...Question 4	.460	<.01
BDI	SBQ Total	.431	<.01
BDI	SBQ...Question 2	.472	<.01

The full list of abbreviations for scales and subscales used in this study is as follows:

RFL Total= Reasons For Living Inventory sum of all subscales
 RFL /rf= Responsibility to Family subscale of RFL
 RFL/s&c= Survival and Coping subscale of RFL
 RFL/mo= Moral Objections subscale of RFL
 RFL/fs= Fear of Suicide subscale of RFL
 RFL /fsd= Fear of Social Disapproval subscale of RFL
 RFL /prc= Peer-related Concerns subscale of RFL
 WCQ Total= Ways of Coping Questionnaire sum of all subscales
 WCQ /1= Confrontive Coping subscale of WCQ
 WCQ/2= Distancing subscale of WCQ
 WCQ /3= Self-Controlling subscale of WCQ
 WCQ /4= Seeking Social-Support subscale of WCQ
 WCQ /5= Accepting Responsibility subscale of WCQ
 WCQ/6= Escape-Avoidance subscale of WCQ
 WCQ /7= Planful- Problem Solving subscale of WCQ
 WCQ/8= Positive Reappraisal subscale of WCQ
 MCSDS= Marlowe Crowne Social Desirability Scale
 TAS= Toronto Alexithymia Scale
 BDI= Beck Depression Inventory
 BHS= Beck Hopelessness Scale
 SBQ...Question 1= Have you ever seriously considered or attempted to kill yourself?
 SBQ...Question2= How often have you thought about killing yourself in the past year?
 SBQ...Question3= Have you ever told someone that you were going to commit suicide, or that you might do it?
 SBQ...Question4= How likely is it that you will attempt suicide someday?
 SBQ Total= Sum of the four SBQ questions

3-11 Type of Multiple Regression Analysis.

In the foregoing analysis of results and hypothesis testing *simultaneous* multiple regression was the procedure used to compute the relationship(s) between the set of predictor variables and suicidal behaviour. This procedure produces a single equation. However, there is a wealth of information about the interrelationships among the variables which is not extractable from the single equation (Cohen & Cohen, 1983). Using a hierarchical analytic strategy, whereby variables (or sets of variables) are entered sequentially, has the advantage of producing a *cumulative* R^2 series. As a tool this type of analysis is particularly

useful when investigating clinical predictors since it not only provides some sort of order to the predictors, but also gives one an idea of the relative additional contribution each predictor makes when added to the predictor(s) already included.

At least two analytic strategies can be advanced. First, the use of a *step-wise* multiple regression analysis, which is designed to identify the best subset of predictors from an original larger set (Neufeld, 1977). This procedure requires careful selection of likely predictors on an a priori basis, that is by reference to theory and/or previous empirical data. The main drawback with stepwise regression is the possibility of loss of meaningful causal relationships, especially when predictors are selected on a basis with very little theory to guide selection. For example variables such as Age and Sex are implicit to individuals, one is born with values on them. That is, unless there is good theoretical or empirical reason to ignore them, it makes sense to introduce them into the analysis at an early stage since they pre-date most other variables. The option of 'forcing' variables can be used to specify an a priori hierarchy. Which leads to the second analytic strategy, namely *hierarchical* multiple regression analysis, in which the sequential entry of variables is dictated by the purpose and logic of the research. This strategy is preferable when a researcher has a good idea of the causal situation in advance.

For the current research the object is to identify putative causal factors. Therefore hierarchical analysis per se is not strictly suitable. Stepwise regression analysis is proposed as a suitable tool. This procedure selects (from the pool of predictors) the one variable at each stage which makes the largest contribution to 'explained variance'. or R^2 . It is important to note that this procedure defines the order of contribution on an a posteriori basis, using the relative uniqueness of the variables in the current sample. Interpretation of results therefore requires caution. Contributory relationships may be different in other samples.

Another problem that can occur with stepwise analysis is the possibility of variables which were entered early on in the process, later becoming trivial or non-significant in their contribution after other variables have been added. This problem can be circumvented by use of a programme which provides for the removal of such variables. That is at each step the variables are examined to see whether any should be removed according to the removal criterion. The current research used a stepwise regression package with this procedure. The *F-to-enter*

and *F-to-remove* levels were set such that variables entering the equation did so at *least* with $p < .05$ level of significance. For example, *F-to-enter* for $df = 1, 32$ needs to be 4.10 for $p < .05$, or 7.50 for $p < .01$. With an *F-to-enter* of 4.10, *F-to-remove* was set at 4.09. This ensures that variables retain *nontriviality* whilst remaining in the equation.

In summary, stepwise multiple regression analysis is proposed as the most appropriate tool for elucidating causal factors in this study, given certain cautions which have been discussed.

3-12 *First Level Analysis of Possible Causal Factors of Suicidal Behaviour.*

From Table 13 it is apparent that Beck Depression Inventory (BDI), Reasons For Living Inventory (RFL) and Ways of Coping Questionnaire (WCQ) scores correlate significantly with suicidal behaviour. Thus there is an a priori reason for entering these variables into the stepwise multiple regression analysis. As discussed above there is a widespread belief that hopelessness is also a common predictor of suicidal behaviour (e.g., Cole, 1988).

As a first level analysis then, it was decided to use the Beck Hopelessness Scale (BHS) score, along with BDI, RFL Total, and WCQ Total scores. These were used in five stepwise multiple linear regression analyses, using the five SBQ scores as criterion variables. The RFL Total, and WCQ Total scores were generated by summing the subscales, which is an adequate transformation given the correlational basis of multiple regression. Results were as follows: BDI and no other variable was found to significantly predict the 'global' suicidal behaviour score ($F = 7.307$, $df = 1, 32$, $p < .05$) accounting for 18.6% of the variance, and also SBQ...Question2 (How often have you thought about killing yourself in the past year?) accounting for 22.3% of the variance ($F = 9.19$, $df = 1, 32$, $p < .01$). WCQ(Total) was found to account for 16.3% of the variance in predicting SBQ...Question4 (How likely is it that you will attempt suicide someday?). RFL (Total) accounted for an extra 12.4%, making a total of 28.7% of variance explained ($F = 6.228$, $df = 2, 31$, $p < .01$). These results are presented in summary form in Table 14. Note that BHS did not significantly predict any of the suicidal behaviour scores. And, that none of the available predictor variables (BDI, BHS, RFL Total, and WCQ Total)

significantly predicted either SBQ...Question1 (Have you ever seriously considered or attempted to kill yourself?), or SBQ...Question 3 (Have you ever told someone that you were going to commit suicide, or that you might do it?). Those variables which did not enter the stepwise multiple regression equation were rejected by the computer on the grounds of non-significance. That is the *F-to enter* was not exceeded, meaning that the unique contribution of variance to the criterion variable was non-significant, or trivial.

Table 14. Stepwise regression equations using hopelessness, depression, reasons for living, and ways of coping as predictors of suicidal behaviours.

Criterion variable: SBQ

Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
BDI	0.186		BHS	-0.142	0.642
			RFL Total	-0.125	0.489
			WCQ Total	0.236	1.83

Criterion variable: SBQ...1

Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
None					

Criterion variable: SBQ...2

Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
BDI	0.223		BHS	-0.17	0.009
			RFL Total	-0.197	1.252
			WCQ Total	-0.083	0.214

Criterion variable: SBQ...3

Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
None					

Criterion variable: SBQ...4

Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
(1) WCQ Total	0.163		BDI	0.069	0.143
(2) RFL Total	0.287	0.124	BHS	0.077	0.179

3-13 *Second Level Analysis of Possible Causal Factors of Suicidal Behaviour.*

Since the first level analysis indicated that both the Reason For Living Inventory (RFL), and the Ways of Coping Questionnaire (WCQ) were predictive of at least some suicidal behaviour, it is of interest to "open them up" and investigate relative contributions of subscales. This process cannot be performed for the Beck Depression Inventory (BDI) since subscale scores were not calculated in this study. Reference to the correlation matrix of all variables, (see Appendix 1) confirms that there are large significant intercorrelations amongst the subscales of both RFL, and WCQ. For example WCQ/5 and WCQ/7 : $r = .775$ ($p < .01$), and RFL/prc and RFL/s & c : $r = .715$ ($p < .01$). Under these circumstances the relationship between the independent or causal variables can hide or suppress their real relationship with the criterion. As Cohen & Cohen (1983) pointed out, significant suppression effects are likely to be found in aggregate data. Recalling that RFL Total, and WCQ Total are aggregates, there is good reason, besides interest, to enter the subscales into a multiple regression procedure.

3-13.1 *Ways of Coping Questionnaire Scores as Predictors of Suicidal Behaviour.*

The eight WCQ subscales were entered into five stepwise multiple linear regression analyses, using the five SBQ scores as criterion variables. Results were as follows: Planful-Problem Solving (WCQ/7) accounted for 21% of the variance associated with both the 'global' suicidal behaviour score, ($F = 8.628$, $df = 1, 32$, $p < .01$) and the question related to Likelihood i.e., SBQ...Question4 ($F = 8.576$, $df = 1, 32$, $p < .01$). Further, it accounted for 15.4% of the variance for question 1 ("Have you ever seriously considered or attempted to kill yourself?"). Confrontive-Coping added a further 9.8% of explained variance for this question ($F = 5.218$, $df = 2, 31$, $p < .05$), making a total of 25.2%. These results are presented in summary form in Table 15. Note that neither SBQ...Question2 (How often have you thought about killing yourself in the past year?), nor SBQ...Question 3 (Have you ever told someone that you were going to commit suicide, or that you might do it?) were significantly predicted by any of the WCQ subscales. Once again it is to be noted that those variables which did not enter the stepwise multiple regression

equation were rejected by the computer on the grounds of non-significance. That is the *F-to enter* was not exceeded, meaning that the unique contribution of variance to the criterion variable was non-significant, or trivial.

Table 15. Stepwise regression equations using ways of coping as predictors of suicidal behaviours.

Criterion variable: SBQ					
Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
WCQ/7	0.212		WCQ/1	-0.11	0.378
			WCQ/2	-0.131	0.539
			WCQ/3	-0.156	0.77
			WCQ/4	-0.036	0.041
			WCQ/5	-0.056	0.096
			WCQ/6	0.057	0.101
			WCQ/8	-0.187	1.128

Criterion variable: SBQ...1					
Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
WCQ/7	0.154		WCQ/2	0.103	0.321
WCQ/1	0.252	0.098	WCQ/3	-0.153	0.717
			WCQ/4	-0.05	0.074
			WCQ/5	0.012	0.005
			WCQ/6	0.277	2.49
			WCQ/8	-0.136	0.561

Criterion variable: SBQ...2					
Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
None					

Criterion variable: SBQ...3					
Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
None					

Criterion variable: SBQ...4					
Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
WCQ/7	0.211		WCQ/1	0.196	1.234
			WCQ/2	-0.137	0.597
			WCQ/3	0.045	0.062
			WCQ/4	-0.018	0.01
			WCQ/5	0.165	0.865
			WCQ/6	0.107	0.36
			WCQ/8	-0.288	2.809

3-13.2 *Reasons For Living Inventory Scores as Predictors of Suicidal Behaviour.*

The six RFL subscales were entered into five stepwise regression analyses, using the five SBQ scores as criterion variables. Results were as follows: Fear of Social Disapproval as a reason for living accounted for 25.2% of the variance of the 'global' suicidal behaviour score ($F = 10.771$, $df = 1, 32$, $p < .01$), 27.9% for the SBQ...Question2 (How often have you thought about killing yourself in the past year?; $F = 12.395$, $df = 1, 32$, $p < .01$), and 22% to SBQ...Question4 (How likely is it that you will attempt suicide someday?; $F = 9.008$, $df = 1, 32$, $p < .01$). These results are presented in summary form in Table 16. Note that neither SBQ...Question1 (Have you ever seriously considered or attempted to kill yourself?), nor SBQ...Question 3 (Have you ever told someone that you were going to commit suicide, or that you might do it?) were significantly predicted by any of the RFL subscales. Once again it is to be noted that those variables which did not enter the stepwise multiple regression equation were rejected by the computer on the grounds of non-significance. That is the *F-to enter* was not exceeded, meaning that the unique contribution of variance to the criterion variable was non-significant, or trivial.

Table 16. Stepwise regression equations using reasons for living, as predictors of suicidal behaviours.

Criterion variable: SBQ					
Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
RFL/fsd	0.252		RFL/rf	0.03	0.028
			RFL/s&c	0.063	0.122
			RFL/mo	0.24	1.897
			RFL/fs	0.17	0.921
			RFL/prc	0.318	3.483
Criterion variable: SBQ...1					
Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
None					
Criterion variable: SBQ...2					
Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
RFL/fsd	0.279		RFL/rf	-0.153	0.741
			RFL/s&c	0.019	0.011
			RFL/mo	0.283	2.704
			RFL/fs	0.238	1.869
			RFL/prc	0.157	0.779
Criterion variable: SBQ...3					
Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
None					
Criterion variable: SBQ...4					
Variables Entered	R ²	R ² Change	Variables not in equation	Partial corr.	F to Enter
RFL/fsd	0.22		RFL/rf	-0.044	0.059
			RFL/s&c	0.093	0.269
			RFL/mo	0.218	1.552
			RFL/fs	0.24	1.899
			RFL/prc	-0.089	0.247

3-14 Third Level Analysis of Possible Causal Factors of Suicidal Behaviour.

A final analytic strategy is to take a less cautious approach and place all variables measured into a stepwise regression analysis, with the five suicidal behaviour scores as the criterion variables. At first sight this may appear to be an a-theoretical manoeuvre. However, it is to be remembered that the (a priori)

selection of variables to be measured was made along *theory-driven* lines, be they valid or not. As a further 'attack' on the model constructed by the stepwise multiple linear regression procedure it was decided to introduce a *hierarchical* stepwise regression analysis, in competition with the 'free-choice' stepwise programme. This involved forcing variables into the equations, before allowing the computer to make its stepwise inclusion choices (which are a mixture of 'forward' and 'backward' procedures). The variables forced were Sex, Age, Beck Depression Inventory, Beck Hopelessness Inventory, and the Marlowe-Crowe Social Desirability Scale. These were chosen on the basis of, 'logic' in the case of Age and Sex, and prominence in the literature (as discussed above) in the case of the other three scores.

Results were as follows:

3-14.1 Predictors of SBQ...Question1 (Have you ever seriously considered or attempted to kill yourself?) .

Using SBQ...Q1 as the criterion three variables achieved significance and entered the stepwise regression equation ($F= 7.364$, $df= 3, 30$, $p<.01$), namely the Planful-problem solving subscale of WCQ accounting for 15.4% of the variance, the Marlowe-Crowne Social Desirability Scale accounting for another 11.6% of the variance, and the Confrontive coping subscale of WCQ accounting for a further 11.6% of the variance. Thus a total of 42.4% of the variance was accounted for by these three variables.

In the *forced* stepwise regression equation ($F= 3.292$, $df= 7,26$, $p<.05$) Sex, Age, the Beck Depression Inventory, the Beck Hopelessness Scale, and the Marlowe-Crowne Social Desirability Scale were all forced into the equation, between them accounting for 19.9% of the variance. The Confrontive coping subscale of WCQ contributed a further 10.9% of variance explained, and the Planful-problem solving subscale of WCQ accounted for another 16.2% of the variance. Thus a total of 47% of the variance was accounted for by these seven variables. This is 5% more than the three variables in the free choice equation. The results are presented in Table 17.

Table 17. Regression results for Criterion Variable: SBQ...Question1 Have you ever seriously considered or attempted to kill yourself?

Forced Stepwise Regression				'Free-choice' Stepwise Regression			
Predictor Variable	R ²	R ² Change		Predictor Variable	R ²	R ² Change	
* SEX	0.001			WCQ/7	0.154		
* AGE	0.001	0.0		MCSDS	0.270	0.116	
* BDI	0.031	0.030		WCQ/1	0.424	0.154	
* BHS	0.116	0.085					
* MCSDS	0.199	0.083					
WCQ/1	0.308	0.109					
WCQ/7	0.470	0.162					
Where * indicates FORCED variable							
Variables not in Equation	Partial Corr.	F to Enter		Variables not in Equation	Partial Corr.	F to Enter	
RFL/rf	-0.190	0.937		SEX	0.096	0.268	
RFL/s&c	-0.290	2.293		AGE	-0.117	0.402	
RFL/mo	-0.267	1.913		RFL/rf	-0.087	0.223	
RFL/fs	-0.096	0.233		RFL/s&c	-0.126	0.465	
RFL/fsd	-0.260	1.814		RFL/mo	-0.238	1.748	
RFL/prc	0.037	0.034		RFL/fs	-0.129	0.492	
WCQ/2	0.169	0.735		RFL/fsd	-0.200	1.210	
WCQ/3	-0.025	0.016		RFL/prc	0.097	0.278	
WCQ/4	-0.075	0.141		WCQ/2	0.103	0.312	
WCQ/5	0.028	0.019		WCQ/3	-0.109	0.351	
WCQ/6	0.176	0.798		WCQ/4	-0.078	0.176	
WCQ/8	-0.170	0.745		WCQ/5	-0.065	0.124	
TAS	0.102	0.261		WCQ/6	0.177	0.937	
				WCQ/8	-0.146	0.635	
				TAS	0.049	0.069	
				BDI	0.03	0.026	
				BHS	-0.154	0.708	

3-14.2 Predictors of SBQ...Question2 (How often have you thought about killing yourself in the past year?).

Using SBQ...Question2 as the criterion three variables achieved significance and entered the stepwise regression equation ($F= 9.284$, $df= 3, 30$, $p<.01$), namely the Fear of Social Disapproval subscale of RFL accounting for 27.9% of the variance, the Beck Depression Inventory accounting for another 12.2% of the variance, and the Peer-related concerns subscale of RFL accounting for a further 8% of the variance. Thus a total of 48.1% of the variance was accounted for by

these three variables.

In the *forced* stepwise regression equation ($F = 3.786$, $df = 6, 27$, $p < .01$) Sex, Age, the Beck Depression Inventory, the Beck Hopelessness Scale, and the Marlowe-Crowne Social Desirability Scale were all forced into the equation, between them accounting for 26.8% of the variance. The Fear of Social Disapproval subscale of RFL contributed a further 18.9% of variance explained. Thus a total of 45.7% of the variance was accounted for by these six variables. This is 2.3% less than that explained by the three variables in the free choice equation. The results are presented in Table 18.

Table 18. Regression results for Criterion Variable: SBQ...Question2 How often have you thought about killing yourself in the past year?

Forced Stepwise Regression				'Free-choice' Stepwise Regression			
Predictor Variable	R ²	R ² Change		Predictor Variable	R ²	R ² Change	
* SEX	0.016			RFL /fsd	0.279		
* AGE	0.019	0.003		BDI	0.401	0.122	
* BDI	0.262	0.243		RFL/prc	0.481	0.080	
* BHS	0.266	0.004					
* MCSDS	0.268	0.002					
RFL /fsd	0.457	0.189					
Where * Indicates FORCED variable							
Variables not in Equation	Partial Corr.	F to Enter		Variables not in Equation	Partial Corr.	F to Enter	
RFL/rf	-0.084	0.183		SEX	-0.169	0.853	
RFL/s&c	0.077	0.153		AGE	0.066	0.126	
RFL/mo	0.267	1.999		RFL/rf	-0.181	0.982	
RFL/fs	0.177	0.843		RFL/s&c	0.097	0.274	
RFL/prc	0.317	2.914		RFL/mo	0.216	1.423	
WCQ/1	-0.147	0.573		RFL/fs	0.173	0.891	
WCQ/2	-0.160	0.685		WCQ/1	-0.072	0.151	
WCQ/3	-0.043	0.049		WCQ/2	-0.094	0.258	
WCQ/4	0.148	0.579		WCQ/3	0.890	0.232	
WCQ/5	-0.142	0.535		WCQ/4	0.235	1.692	
WCQ/6	-0.179	0.864		WCQ/5	-0.054	0.085	
WCQ/7	0.0	0.0		WCQ/6	-0.148	0.652	
WCQ/8	0.201	1.091		WCQ/7	0.053	0.083	
TAS	-0.164	0.719		WCQ/8	0.227	1.583	
				MCSDS	0.170	0.860	
				TAS	-0.028	0.197	
				BHS	-0.001	0.0	

3-14.3 Predictors of SBQ...Question3 (Have you ever told someone that you were going to commit suicide, or that you might do it?).

Using SBQ...Question3 as the criterion no variables achieved significance and therefore none entered the stepwise regression equation.

In the *forced* stepwise regression equation ($F = .699$, $df = 5, 28$, not significant) Sex, Age, the Beck Depression Inventory, the Beck Hopelessness Scale, and the Marlowe-Crowne Social Desirability Scale were all forced into the equation, between them accounting for only 11.1% of the variance. The results are presented in Table 19. The only proposed predictor variable significantly correlated with SBQ...Question 3 was WCQ/ 4, Seeking Social-Support as a way of coping ($r = .329$, $p < .05$).

Table 19. Regression results for Criterion Variable: SBQ...Question3 Have you ever told someone that you were going to commit suicide, or that you might do it?

Forced Stepwise Regression				'Free-choice" Stepwise Regression			
Predictor Variable		R ²	R ² Change	Predictor Variable		R ²	R ² Change
*	SEX	0.001		none entered			
*	AGE	0.009	0.008				
*	BDI	0.065	0.056				
*	BHS	0.078	0.013				
*	MCSDS	0.111	0.098				
Where * indicates FORCED variable							
Variables not in Equation		Partial Corr.	F to Enter				
RFL/rf		0.225	1.443				
RFL/s&c		0.094	0.238				
RFL/mo		0.154	0.659				
RFL/fs		-0.064	0.111				
RFL/fsd		-0.091	0.225				
RFL/prc		0.171	0.816				
WCQ/1		0.16	0.713				
WCQ/2		0.021	0.012				
WCQ/3		0	0				
WCQ/4		0.308	2.837				
WCQ/5		-0.057	0.089				
WCQ/6		-0.048	0.062				
WCQ/7		0.074	0.147				
WCQ/8		0.031	0.026				
TAS		-0.283	2.35				

3-14.4 Predictors of SBQ...Question4 (How likely is it that you will attempt suicide someday?).

Using SBQ...Question4 as the criterion two variables achieved significance and entered the stepwise regression equation ($F= 12.315$, $df= 2, 31$, $p<.01$), namely the Fear of Social Disapproval subscale of RFL accounting for 22% of the variance, and the Planful-problem solving subscale of WCQ accounting for a further 22.3% of the variance. Thus a total of 44.3% of the variance was accounted for by these two variables.

In the *forced* stepwise regression equation ($F= 4.648$, $df= 8,25$, $p<.01$) Sex, Age, the Beck Depression Inventory, the Beck Hopelessness Scale, and the Marlowe-Crowne Social Desirability Scale were all forced into the equation, between them accounting for only 14.2% of the variance. However, the Survival and Coping subscale of RFL contributed a further 20.3% of variance explained. The Fear of Social Disapproval subscale of RFL accounted for another 16.1% of the variance, and the Planful-problem solving subscale of WCQ accounting for a further 9.2%. Thus a total of 59.8% of the variance was accounted for by these eight variables, 15.5% more than that explained by the two variables in the free choice equation. The results are presented in Table 20.

Table 20. Regression results for Criterion Variable: SBQ...Question4 How likely is it that you will attempt suicide someday?

Forced Stepwise Regression			'Free-choice" Stepwise Regression		
Predictor Variable	R ²	R ² Change	Predictor Variable	R ²	R ² Change
* SEX	0		RFL /fsd	0.22	
* AGE	0.006	0.006	WCQ /7	0.443	0.223
* BDI	0.107	0.101			
* BHS	0.114	0.007			
* MCSDS	0.142	0.028			
RFL /s&c	0.345	0.203			
RFL /fsd	0.506	0.161			
WCQ /7	0.598	0.092			
Where * indicates FORCED variable					
Variables not in Equation	Partial Corr.	F to Enter	Variables not in Equation	Partial Corr.	F to Enter
RFL/rf	-0.36	3.577	SEX	0.042	0.052
RFL/mo	-0.017	0.007	AGE	-0.217	1.478
RFL/fs	0.236	1.415	RFL/rf	-0.142	0.614
RFL/pro	-0.131	0.421	RFL/s&c	0.108	0.352
WCQ/1	0.349	3.325	RFL/mo	0.058	0.102
WCQ/2	-0.042	0.042	RFL/fs	0.246	1.931
WCQ/3	-0.081	0.158	RFL/pro	-0.127	0.493
WCQ/4	-0.066	0.104	WCQ/1	0.294	2.838
WCQ/5	0.16	0.633	WCQ/2	-0.062	0.117
WCQ/6	0.117	0.332	WCQ/3	0.033	0.032
WCQ/8	0.009	0.002	WCQ/4	0.101	0.312
TAS	-0.142	0.497	WCQ/5	0.169	0.881
			WCQ/6	0.11	0.366
			WCQ/8	-0.148	0.671
			MCSDS	0.095	0.271
			TAS	-0.112	0.38
			BDI	0.051	0.077
			BHS	0.143	0.624

3-14.5 Predictors of the SBQ...Total, that is the sum of the four component questions.

Using the SBQ...Total as the criterion four variables achieved significance and entered the stepwise regression equation ($F = 12.494$, $df = 4, 29$, $p < .01$), namely the Fear of Social Disapproval subscale of RFL accounting for 25.2% of the variance, the Planful- Problem Solving subscale of WCQ accounting for another 22.5% of the variance, the Peer-related concerns subscale of RFL accounting for a

further 6.7% of the variance, and the Beck Depression Inventory accounting for a further 8.9%. Thus a total of 63.3% of the variance was accounted for by these four variables.

In the *forced* stepwise regression equation ($F = 5.655$, $df = 8, 25$, $p < .01$) Sex, Age, the Beck Depression Inventory, the Beck Hopelessness Scale, and the Marlowe-Crowne Social Desirability Scale were all forced into the equation, between them accounting for 22.6% of the variance. The Fear of Social Disapproval subscale of RFL contributed a further 19.7% of variance explained, the Peer-related concerns subscale of RFL contributed 12.4%, and the Planful-Problem Solving subscale of WCQ accounted for 9.7%. Thus these eight variables accounted for 64.4% of the variance which is 1.1% more than the four variables in the free choice equation. The results are presented in Table 21.

Table 21. Regression results for Criterion Variable: SBQ...Total That is the sum of the four component questions.

Predictor Variable	R ²	R ² Change	Predictor Variable	R ²	R ² Change
* SEX	0.001		RFL /fsd	0.252	
* AGE	0.001	0	WCQ /7	0.477	0.225
* BDI	0.194	0.193	RFL /prc	0.544	0.067
* BHS	0.217	0.023	BDI	0.633	0.089
* MCSDS	0.226	0.009			
RFL /fsd	0.423	0.197			
RFL /prc	0.547	0.124			
WCQ /7	0.644	0.097			

Where * Indicates FORCED variable

Variables not in Equation	Partial Corr.	F to Enter	Variables not in Equation	Partial Corr.	F to Enter
RFL/rf	-0.151	0.562	SEX	0.064	0.115
RFL/s&c	0.073	0.127	AGE	-0.097	0.266
RFL/mo	0.05	0.061	RFL/rf	-0.092	0.237
RFL/fs	0.138	0.467	RFL/s&c	-0.008	0.002
WCQ/1	0.017	0.007	RFL/mo	-0.042	0.05
WCQ/2	0.028	0.019	RFL/fs	0.06	0.1
WCQ/3	0.017	0.007	WCQ/1	0.064	0.117
WCQ/4	0.274	1.954	WCQ/2	0.044	0.054
WCQ/5	-0.084	0.172	WCQ/3	0.021	0.013
WCQ/6	0.017	0.007	WCQ/4	0.278	2.349
WCQ/8	0.075	0.136	WCQ/5	-0.063	0.111
TAS	-0.091	0.202	WCQ/6	0.086	0.209
			WCQ/8	0.019	0.01
			MCSDS	-0.135	0.52
			TAS	-0.076	0.161
			BHS	0.007	0.001

Discussion

4-1 Discussion of Results Pertaining to the Hypotheses.

The first hypothesis suggested that age would produce a differential effect on peer-related concerns and family concerns, and that this difference would impinge on suicidal behaviour. The data did not provide much support for this idea. Neither the new Peer- Related Concerns subscale added to the Reasons for Living Inventory (RFL), nor the Responsibility to Family subscale of the same inventory were found to significantly predict suicidal behaviour. Furthermore, the regression analysis of Sex and Age onto the two subscales did not produce a significant result. However, by grouping the subjects into 'developmental' groups of Adolescents, Young Adults and Middle Aged subjects, family was a significantly more important reason for living than peers. In terms of mean ratings the smallest difference between importance of family and peers was for the Young Adults, those aged between 20 and 30 years. A slightly bigger, but not significant difference, in the same direction was found for Adolescents. That is, family was once again a more important reason for living than peers, but not significantly so. At no stage was peer-influence observed to be greater than family. One interpretation of these results is that peer-related concerns have diminished by middle age *relative* to family. An alternative explanation is simply that family has become more important. Furthermore, this could be an artifact of attitudinal differences across cohorts, with those currently in mid-life placing relatively greater importance on families than those currently in young adulthood or adolescence. The present study cannot answer these issues. It is clear however, that family and/or peer-related concerns together or individually provided relatively little influence on suicidal behaviour for this sample.

Linehan et al., (1983) reported that the Responsibility to Family subscale of RFL discriminated those who were never suicidal from all other suicide behaviours in the general population, and discriminated those who were currently nonsuicidal from current attempters and ideators in a clinical population (which included presentation for non-suicide related reasons). It may be that because the sample in the present study did not include any nonsuicidal individuals that this subscale was insensitive to the range of behaviours. Linehan's et al., (1983) original inventory did not include a peer-related concerns subscale, so comparison is not possible. Since this study was begun, David Cole (1989) has published results of a study using the RFL inventory with adolescents. He also noted that preoccupation with peer acceptance is definitely a central adolescent issue (Berndt, 1979), and that contrary to his expectations fear of social disapproval was not significantly related to suicidal behaviours. It may be that fear of social disapproval is non-specific to peers. (Fear of social disapproval is discussed below).

It does not appear that any other researcher has previously investigated peer-specific influences on adaptive reasons for living (and *not* committing suicide) across age. Whilst this study suggested that age has some effect on peer influences *relative* to family by age, neither of these two factors appeared to be linked to suicidal behaviours. This study had a small number of subjects. It could also be argued that items used were not sufficiently specific to peers, and to the *exclusion* of all others. For example, use of the phrase "others my age", as in the questionnaire used in this study, may possibly invite the impression of spouse, siblings and/or other family members of similar age. Better wording of peer-specific items may illuminate qualitative differences in reasons for living between adolescents and adults, and maybe between younger and older adults. It would be interesting to test the hypothesis that peer-related concerns as reasons for living are significantly less in a geriatric population than in adolescents and younger adults. In so doing, care would need to be taken in interpretation against possible period and/or cohort effects. Finally, whilst peer-influence and familial responsibility do not appear to *directly* impinge on suicidal behaviours, it may still turn out that they are both important *mediators* in the development of suicidal behaviours. As such it is intended that the term 'mediator' is as defined by Folkman & Lazarus (1988), meaning a variable which is generated *in* an encounter, and not necessarily existant prior to the sequence of events.

The second hypothesis suggested that coping style produces a differential effect on the development of suicidal behaviours. And, as a sub-hypothesis that coping style would be variable across age. In searching for qualitative differences to help enhance the understanding of self-destructive behaviours in adolescents and younger adults, coping has intuitive appeal. Any deepening of understanding with regard to the relationship between coping and self-destruction would be welcome to clinicians, but if qualitative differences in coping style across the lifespan can be isolated, then this would be even more useful.

Data from this sample provided little evidence that age affects ways of coping. The idea that coping style changes or develops with age has intuitive appeal. Furthermore, there is some evidence that ways of coping differ between middle aged and elderly individuals (Folkman & Lazarus, 1988). This difference was noted after measurement with the Ways of Coping Questionnaire. As discussed above Compas et al., (1988) reported young adolescents and older children had differences in their use of problem-focused and emotion-focused strategies. In the current sample the only coping variable which correlated significantly with age was the Positive Reappraisal Subscale (see the correlation matrix in Appendix 1). That is, older subjects tended to make considerably greater use of positive reframing of stressful events in their lives. This reflects attempts to create positive meaning, and may be due to increasing wisdom that often comes with exposure to life experiences. An alternative explanation is that the increased use of positive reappraisal by older individuals is due to a moral or religious tone, given that the only other variable to correlate significantly with age was the Moral Objections subscale of the RFL. This could be a cohort effect, merely reflecting the socialization differences between those currently middle-aged and the younger individuals brought up in our currently considerably more secular society. Possibly the lack of more substantive age effects on coping in this study is due to the large age range (13 to 54.9 years), and small number of subjects. Alternatively it may be that there are no differences in coping style across these ages. A more likely explanation is that the instrument used is either not sensitive enough, or is not sufficiently specific to detect subtle developmental changes in coping style. It is of interest to note that sex did not correlate significantly with any of the dimensions of coping. (In fact sex did not correlate significantly with any of the variables measured in this study).

Of considerably greater interest to the present research was the central tenet of the second hypothesis which proposed that coping style can produce differential effects on the production of suicidal behaviour. This idea received some support in that the Planful-Problem Solving subscale was significant in predicting level of suicidal behaviour (i.e. the 'global' SBQ score).

In terms of very serious suicidal ideation and/or serious suicidal intention in an attempt (i.e. Question 1 of the SBQ), three subscales of the Ways of Coping Questionnaire were found to be significant predictors. And, this was in a simultaneous regression model which nearly achieved significance for overall goodness of fit. The dimensions of coping found to predict the more serious suicidal behaviours were Confrontive coping, Escape-avoidance, and Planful-Problem solving. Folkman et al., (1986) had noted that Confrontive coping describes aggressive efforts to alter the situation, and also suggests a degree of hostility and risk-taking. These features are quite congruous with the notion of self-destructive tendencies. The typical Freudian position of aggression turned inward has received some support (Litman 1967; in Lester & Lindsley 1987). Furthermore, Lester & Lindsley (1987) reported evidence that some suicidal individuals are more outwardly aggressive also, or in other words more hostile.

It is perhaps of no surprise that Escape-Avoidance should be a coping style used by suicidal people. As discussed above Houston's (1987) model proposed covert coping strategies may include cognitive avoidance and escape. This can be seen in items from the Escape-Avoidance subscale such as "Had fantasies about how things might turn out", "Refused to believe that it had happened", and "wished that the situation would go away or somehow be over with". In terms of Houston's overt coping responses avoidance is reflected in items like "Avoided being with people in general", and "Slept more than usual", whilst escape is reflected in "Hoped a miracle would happen" and "Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, and so forth."

Problem-solving by the use of deliberate focused efforts to alter a situation, along with an analytic approach are the features measured by the Planful Problem-solving subscale according to Folkman et al., (1986). Items such as "I made a plan of action and followed it" indicate the *deliberate* nature of the suicidal intent. Endorsement of an item such as "Drew on my past experiences; I was in a similar position before" may be indicative of the notion that suicidal behaviours are built on previous experiences, especially prior ideation.

As a hypothesis then, there is some support for the idea that coping style differentially affects the production of suicidal behaviours. Further discussion of this is below, in the section on causal factors.

The third and final hypothesis, suggested that alexithymia would in some way be related to suicidal behaviour, and perhaps also vary by age. In fact the alexithymia measure was found to be unrelated to age, and did not predict any of the suicidal behaviour measures. This appears to have been a completely novel hypothesis, with no other previous research on the relationship between these variables in the literature. One possibility is that the results from this sample are correct, that is there is no link between alexithymia and suicide. Another possibility is that the Toronto Alexithymia Scale is an inadequate measure. For example, it may be argued that in order to complete the questionnaire subjects need a relatively high degree of insight. Of course, inherent in this discussion is a confusion as to whether alexithymia is a state or a trait. The original hypothesis was made with the notion that alexithymia may represent a personality trait which predisposes suicidal behaviour. There is no evidence for this from the present sample. If alexithymia was a consistent and stable style of responding, a personality variable, then as such it would have represented a component of a suicidal personality. As discussed above this concept has been generally abandoned in current theory. This hypothesis was therefore not as well formulated as it might have been. Some evidence is available which suggests alexithymia is more a state than a trait (Keltikangas - Jarvinen, 1987). If alexithymia as a state were to contribute to the production of suicidal behaviour, then questions regarding the consistency of such a state over a crisis state need to be asked. The possible involvement of alexithymia may yet be demonstrated, but currently it appears there is no evidence to suggest it has any practical use in the treatment, or primary prevention of suicidal behaviour.

4-2 Discussion of Results Pertaining to the Analysis of Possible Causal Factors of Suicidal Behaviour.

The concept of constructing a causal model of psychological variables contributing to suicidal behaviour is driven by the desire to enhance clinical

predictive capacities. As noted above, the diagnosis of depression is not synonymous with suicide and may lead to over 90% false-positives in the evaluation of suicide risk. Putative psychological predictors were reviewed above, and some selected for measurement in this study. In the portion on causal factors in the results section above, stepwise multiple linear regression analyses were reported at three levels of analysis.

At the first level of analysis, depression, hopelessness, reasons for living, and coping scores were used in an analysis. Depression was found to be a predictor of the 'global' suicidal score, and the question relating to ideation over the previous twelve months. The fact that depression was related most strongly to consistent ideation during the previous year is not really surprising, since (as discussed above) the majority of depressives experience suicidal ideation at some stage. Of interest was the significant contribution reasons for living and coping made to the prediction of the suicide behaviour question relating to likelihood. Given that research such as the current study probes psychological factors *after* the event of a suicide attempt, it may be argued that this question is the one which most clearly taps into *current* suicidal ideation, and/or plans. It may be that an individual perceives suicide as a coping option, and recognizes that he or she has little reason to be. It may be that hopelessness has been subsumed under a lack of reasons for living, and this explains the absence of hopelessness from the predictor variables. As discussed above, hopelessness has been generally described as a superior predictor of suicidal behaviour over depression (Petrie et al., 1988). This was not the case for the current sample. Hopelessness is in some way related to social desirability, as noted in the literature review. If Holden's et al., (1989) interaction model is indeed correct then the relationship between suicide and hopelessness can be negated by a sense of capability, rather than incapability. The question as to whether the subjects of this study *perceived themselves* as capable cannot be answered. Future research may do well to take into consideration not just whether an individual copes well or not but also (or instead) whether that individual sees himself or herself as coping well or not. These self-attributions could very well be interactive, as for example suggested by Holden et al., (1989).

The second level of causal analysis used the subscales of coping, and reasons for living as putative predictors of suicidal behaviours, in separate analyses. Planful problem-solving as a way of coping was found to significantly predict the 'global' suicide score, serious suicide intent (Question 1), and likelihood

(Question 4). Confrontive coping contributed significant cumulative variance accounted for in the prediction of more serious suicidal behaviour. This suggests that a confrontive coping style is causal of at least some suicidal behaviour, whilst planful approaches to solving problems appear to be more generally causal of suicidal behaviour. It is perhaps of concern that those who use such planful approaches to problems are more likely to either have a history of serious suicidal ideation and attempts, or believe that it is likely they will attempt suicide in the future. One general implication, if these results are indeed correct, is that training clients with a history of suicidal behaviour in problem-solving may need to be carefully managed, since there is the possibility that increased problem-solving ability may lead to enhanced suicide planning.

Fear of Social Disapproval as a reason for living was found to significantly predict the 'global' suicide score, a history of ideation over the last year, and likelihood. It is to be noted that the correlations were negative. That is increasing severity of suicidality was associated with *less* fear of social disapproval as reason to live. Fear of social disapproval was not significantly linked to (Marlowe-Crowne) social desirability. This implies there is a difference between social disapproval and social desirability (at least as measured by the MCSDS). Linehan et al., (1983) found a small negative correlation between Edwards' social desirability and fear of social disapproval for a clinical population, and a small negative but significant correlation for a general population. For this sample a comparison with Linehan's et al., result for the clinical population is more appropriate. Their conclusion was that currently nonsuicidal individuals were more concerned about social disapproval than those who were currently ideating or had a history of attempt. This result was replicated in the current sample, to the extent that increasing suicidality was linked to less fear of social disapproval as noted above. Cole (1989) however, as discussed, reported no relationship between fear of social disapproval and suicidal thoughts or behaviour for normal adults. He noted this result as contrary to expectations. Cole did find a relationship for juvenile delinquents though, with current ideators *more* apt to endorse fear of social disapproval as a reason for not committing suicide. It is possible therefore that social disapproval has a complex relationship with suicide. The likelihood of its entanglement with socio-cultural factors is high, given the proposed role that suicide taboos have in preventing suicide (Shaffer et al., 1988). Therefore cross-cultural differences in endorsement of fear of social disapproval as a reason for

not committing suicide might be predicted. Research would be needed to test this idea. In New Zealand it would be of particular interest to address this issue across Maori and Polynesian cultures, and cultures of European origin.

In summary then this second level of causal analysis provides some support for the notion that individuals who use planful ways of coping with problems, and who have less fear of social disapproval with respect to suicide are more likely to engage in suicidal behaviours. In as much that fear of social disapproval is different from social desirability for suicidal individuals, it could be argued that the former is passive and the latter a more active behaviour. The concept of a socially desirable 'mask' implies active projection of a psychological profile, whereas fear of social disapproval implies a response to an active projection of an attitude by another individual.

The third level of causal analysis was to enter all variables into a stepwise regression analysis in two competing formats. One with the variables sex, age, depression, hopelessness, and social desirability *forced* into the equation, and the other allowing free-choice of all the variables. Two equations were computed for each of the five SBQ scores as criterion variables.

The question 'Have you ever seriously considered or attempted to kill yourself?' as criterion was significantly predicted by social desirability (Marlowe-Crowne), planful problem-solving as a coping strategy, and confrontive coping in both modes of analysis. The order of the coping dimensions was reversed from forced to free-choice equation, but they retained significance in both. This adds credence to the suggestion that coping style is a causal factor in more serious suicidal behaviour, *after* all the other variables have been controlled for. One of the advantages of the multiple linear regression procedure is its automatic ability to measure contributions of each variable whilst controlling for all the others. That is, these coping dimensions appear to be providing *unique* contributions in the prediction of suicidal behaviour. The MCSDS appears to be associated with both factors of social desirability (i.e., general sense of capability, and interpersonal sensitivity) according to Holden et al., (1989). It cannot be discerned from the present data which of these factors are contributing to prediction of suicidal behaviour in the Christchurch sample. However, if it were to be the general sense of capability (or incapability as the case is likely to be in the clinical population) then this may be exerting a moderating influence on hopelessness as it relates to suicidal behaviour. Further research is clearly required to be able to address this

issue any further. Such research would need to make the distinction between factors of social desirability, as noted by Holden et al., (1989). The MCSDS apparently does not make such a distinction, and therefore an alternative measurement instrument which is not sensitive to psychopathology would be required.

The question 'How often have you thought about killing yourself in the past year?' represents those with a history of frequent suicidal ideation. In the forced mode significant predictors of it as criterion were depression, and fear of social disapproval as a reason to stay alive. In the free-choice mode fear of social disapproval made the greatest contribution to prediction, followed by depression, and then peer-related concerns as a reason for living. Given its non-appearance in the hierarchical forced equation, the peer-related concerns factor should be treated with suspicion. A combination of depression *and* less fear of social disapproval as a reason for not committing suicide are therefore significantly predictive of a history of higher frequencies of suicidal ideation. Interpretation needs to be wary of a possible complication in this situation. It may be that less fear of social disapproval as a reason to live is reflected in less inhibition regarding disclosure about suicidal ideation. That is depressives with more concern about social disapproval as a reason to live may in fact experience as much suicidal ideation, but be less prepared to report it. The contribution of less than 0.2% of variance explained by (Marlowe-Crowne) social desirability does not immediately support this caution however.

The question 'Have you ever told someone that you were going to commit suicide, or that you might do it?' as criterion was not predicted by any of the measures used in the study. The only putative predictor variable which was significantly related to this question was Seeking Social-Support as a way of coping. The correlation was positive which makes sense. That is, the individuals who reported most using social support-seeking coping strategies were the ones most likely to have told someone that they had suicidal intentions. Endorsement of items such as "I asked a relative or friend I respected for advice", Talked to someone about how I was feeling" and "Accepted sympathy and understanding from someone" as coping strategies imply a reaching out to others for support, both informational *and* emotional. Individuals who tell others that they have suicidal intent are sometimes labelled 'threateners'. The motivations for making an explicit threat of suicide can be many and varied. Beck (1976; in Rosenhan &

Seligman, 1984) suggested that about 13% of suicide attempts are manipulative. It may be tempting to suggest that suicide threateners are even more frequently manipulative, but there is not the evidence to support this. Furthermore, as Shneidman (1986) pointed out the common purpose of suicide is to seek a solution to intolerable psychological stressors. Threatening self-destruction may be as clear an indication of subjective stress as a clinician may get. There is no evidence that it should not be taken seriously, especially given the epidemiological evidence which points to an increased risk of future suicide after suicidal behaviour. Also it is worth recalling that the notion of suicidal behaviour being trivial or merely a gesture in a manipulative way in a personality disordered individual is not supported according to Casey (1989), as discussed above.

The question 'How likely is it that you will attempt suicide someday?' as criterion was significantly predicted by fear of social disapproval as a reason to live, and then planful problem-solving as a coping strategy in both modes of analysis. In the free-choice equation these were the only two variables which entered. In the forced equation survival & coping beliefs as a reason to live was also a significant contributor of explained variance. However, it's non-appearance in the free-choice equation suggests it be treated with suspicion. As suggested above this question perhaps taps into current suicidal feelings. As before it may be that less fear of social disapproval as a reason to stay alive is reflected in a less inhibited reporting of current suicidal ideation. However, once again it can be pointed out that social desirability, which one would expect to be related to social inhibition, contributed a minimal amount of explained variance. In fact the only significant relationship found in this sample with social desirability was to Moral Objections as a reason to live (see correlation matrix of all variables in Appendix 1). That is, those who reported moral objections as current reasons not to commit suicide, tended to respond in a socially desirable manner.

Using the *total* of the scores for the four suicidal behaviour questions as criterion four variables were found to significantly predict a 'global' suicidal behaviour. These were fear of social disapproval and peer-related concerns as reasons to live, planful problem-solving as a coping strategy and depression. Furthermore, all four entered both the free-choice and forced hierarchical stepwise regression equations. This adds credence to the model. Namely that individuals who have depressive symptomatology, less fear of the disapproval of

others as a reason to live, less concern with others their own age as reasons not to kill themselves, and a coping strategy which involves deliberate problem-focused efforts, are the ones most likely to engage in suicidal thoughts and actions. These psychological predictive factors appear to be qualitatively unaffected by age, sex, social desirability or hopelessness.

In summary this third level of analysis provides some indication that there are qualitative differences in psychological predictors across varying degrees of severity of suicidal behaviour. Unfortunately the current study was unable to differentiate significant qualitative differences across developmental stages of the lifespan. Those qualitative differences which were observed in this research are as follows. Individuals who have engaged in the more serious variety of suicidal behaviour, especially serious attempts appear to use a coping style characterised by planful solving of problems, and confrontive action. That is, it looks like these people are used to making plans and acting on them. In contrast, individuals who have engaged in a high frequency of suicidal ideation appear to be characterised by their belief that it is worth not committing suicide because of what others might think of them, especially in terms of being weak and selfish or out of control. It is conceivable that this concern over social disapproval is enhanced by our cultural *taboo* with respect to suicide. In predicting the likelihood of future suicide attempts which arguably represents current ideation, people from this sample appeared to be characterised by ownership of both the planful style of solving problems, *and* the belief that a reason to live is to avoid the disapproval of others.

4-3 *Limitations of the Current Research.*

By far the most prominent limitation is the small size of the sample used. Power analysis for R^2 would indicate that to detect changes in explained variance of 10% or thereabouts for the number of (independent) predictor variables as in the third level analysis above, at an 80% probability, the number of subjects may have to exceed 200 (Cohen & Cohen, 1983). Therefore, whilst the results reported above may have some intuitive appeal, it must be emphasised that they are *exploratory and tentative in nature.*

A problem which is related to the use of multiple regression analysis is the inter-correlations between predictor variables. The criterion variables, representing different severities of suicidal behaviour, were also highly inter-correlated. Some researchers (for example Bonner & Rich, 1987; Petrie et al., 1988) have attempted to circumvent this problem by performing a principle components factor analysis, and using transformed scores as predictor variables in the multiple regression equations. Whilst this has the virtue of taking the analysis of predictors of suicidal behaviour to a higher level of sophistication, it also carries an inherent danger. Namely, that factorial results may be derived which are difficult, if not impossible, to map onto real-world theoretical knowledge. Certainly factor analysis of (independent) predictor variables has the great advantage of reducing the *number* of such variables, with positive effects on the power analysis, as discussed above. So long as the factorial constructs can be meaningfully translated then this procedure appears to be a justified improvement.

However, it could be argued that the causal analysis of suicidal behaviour involves the complex relationships between a *set* of predictors and a *set* of criterion variables. Therefore a further level of sophistication in the analytic strategy might be to make use of the canonical correlation procedure.

4-4 *Methodological Problems of Suicide Research.*

As discussed above suicidal behaviour is not accessible to true experiments, and so behavioural scientists have been, and are, forced to develop theories from passive observation of the phenomena. Whilst systematic differences in various parameters may be observed, the inference of causation is more problematic. In the above discussion, and analysis of results reference to causal conditions has been made. Of course the analytic strategy, by making use of multiple regression, is based on correlations. It is often noted that while causal connections manifest themselves as correlations, the reverse is not *necessarily* true. A similar problem arises when describing significant differences between, or within groups in the mean of particular variables. Unless other variables are held constant, are fixed, or known it is very difficult to infer causality with any degree of certainty. For

investigations of suicidal behaviours it is not possible to control variables. However, multiple regression allows for the control of other variables in constructing a model. This is not to say that the model is necessarily correct. Careful replication of putative causal factors in *other samples* is essential. Also clinical confirmation would appear to be a reasonable condition of acceptance of any factor as causal.

Of course, any causal model is based on the assumption that a causal variable operates to produce an effect. Inherent in this assumption is the idea of cause 'flowing' to effect in a particular direction. In the production of a complex behaviour such as self-destruction it seems worthwhile to remember the possibility of causal flows *in the opposite direction*. Perhaps the most prominent example of this in the current research is the relationship between depression and suicidal thoughts. It seems apparent that depression predicts, or by implication is causal of, suicidal ideation. However, suicidal ideation is also a contributor to the symptomatology of depression, the syndrome (DSM-III-R, 1987). In what sense is suicidal ideation causal of depression then? These kinds of complex interactions, including possible reciprocal causation, clearly require increasingly sophisticated multivariate analysis, before specific guidelines may be provided for clinicians. However, it seems there is already sufficient evidence to be able to remind clinicians of the need to use a multivariate approach to the assessment, and therefore treatment, of suicidal behaviours; and to be aware of the likelihood of complex interactions, which may be reciprocal, and have a potentiating effect in a non-linear fashion (e.g., Holden et al., 1989).

One immediate implication of reciprocal causation, with respect to suicidal behaviour, stems from the fact that systematic, passive research in naturalistic settings involves the measurement of variables *after* the production of a behaviour. This is a major assumption upon which research, such as the current study, has been predicated. Namely that psychological states are sufficiently consistent or non-transient that realistic measurement of their parameters can be made after an attempt, for example. Van Praag & Plutchik (1985) reported on a study of the possibility of a 'cathartic effect' on mood after a suicide attempt. This notion was first put forward nearly 40 years ago (Farberow, 1950) and has since received scant attention. Undoubtedly this issue needs to be addressed properly by research, since van Praag & Plutchik (1985) concluded that their findings supported the idea that depression levels rated *after* an attempt are not accurate

reflections of depression levels *before* the attempt was made.

Another psychological dimension of complexity which is almost certainly involved in the prediction of suicidal behaviour is the difference between *owning* various psychological attributes, and *using* them. This distinction is immediately apparent in the state-trait issue. An existential belief such as a 'reason for living' may be relatively stable and trait-like, but given critical sets of circumstances, a psychological state, is it put to use or manifested in practice? Similarly there is a distinction between being able to cope with life's problems and *knowing* that one can cope. Such issues could be pivotal in 'tipping the balance' in favour of self-destructive behaviour.

One methodological issue which is constantly implicit in suicide research is the question of whether results derived from survivors of suicide attempts, and individuals exhibiting less serious suicidal behaviour, have any relevance to our understanding of completed suicide. As was discussed above, it is the opinion of the current researcher that suicidal behaviour, whilst manifested in non-linear fashion, is in fact representative of an underlying continuum. This remains a contentious issue, and may do so for some time to come. In the meantime it can be pointed out that even if at a later date this standpoint is proved incorrect, the results of research, such as the present study, also provide useful information for the management of people who make suicide attempts, or experience suicidal ideation.

4-5 *Future Research.*

Whilst the current study necessarily has to be interpreted as exploratory, there are sufficient grounds to suggest that further research be carried out with respect to some of the psychological factors. Linehan's et al., (1983) suggestion that we should pay attention not only to maladaptive characteristics of suicidal people, but also their lack of adaptive life-maintaining characteristics, delineates a deeper issue which remains to be resolved. Namely the relationship between adaptive and maladaptive attributes, for clearly maladaptation is sometimes more than simply a *lack* of adaption. The implication for suicide research is that we should focus some of our attention on existential issues such as adaptive reasons for

living. Further understanding of these have important implications for treatment of suicidal individuals, and possibly primary prevention. Specific approaches might also continue to look for developmentally-based qualitative differences. Given the widespread assumption that adolescents are more 'peer-sensitive' than other age groups why is it that this influence does not appear to translate over to suicidal behaviour?

In terms of coping dimensions it seems that there is also reason to investigate further. The likelihood of coping style developing over the lifespan is also very high. Clearly an important focus for future research could be in an elderly population. Very little information is available on suicidal behaviour in the elderly, yet the highest rates occur in older males.

For both coping and reasons for living further refinement of the measuring instruments seems both inevitable and necessary. A specific improvement that could be made to the measurement of coping strategies would be to include a distinction between the various ways that are used, and how efficacious they are perceived to be by the user.

Given that conducting research is also necessarily an exercise in learning it would be very unusual for a researcher to claim that he or she would conduct the study in an identical fashion if presented with the opportunity to start from the beginning again. Certainly for this study the benefit of hindsight would have been very useful, as would some of the other research which has been published since the project was begun. Whilst it is always possible to be self-castigatory with regard to one's hypotheses after the event, in this case two of them provided results which were sufficiently suggestive to provide the incentive to ask new questions. And, this surely is the best rationale for making hypotheses and testing them; that new questions to be answered will arise, and therefore our understanding and the body of knowledge will be enlarged.

The notion that such a rare event as suicide can be predicted and therefore is a challenge matched by few others in the discipline of psychology. Epidemiological changes, such as have been observed in the trend towards more young people taking their own lives over the last quarter century, will always raise the query 'Why?'. Such a question provides more stimulus to seek for the predictive factors. The single, most constant thread in all of the preceding discussions is that more research will be needed.

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Appendix 1. Correlation Matrix of all Variables.

Where $r > .329$ is significant at the .05 level

and $r > .424$ is significant at the .01 level

VARIABLE	SEX	AGE	RFL/rf	RFL/s&c	RFL/mo	RFL/fs	RFL/fsd	RFL/prc
SEX	1	0.108	0.279	-0.251	-0.027	-0.221	0.041	-0.115
AGE	0.108	1	0.066	0.125	0.393	0.309	0.072	0.016
RFL/rf	0.279	0.066	1	0.531	0.217	0.031	0.554	0.498
RFL/s&c	-0.251	0.125	0.531	1	0.461	0.467	0.589	0.715
RFL/mo	-0.027	0.393	0.217	0.461	1	0.485	0.303	0.417
RFL/fs	-0.221	0.309	0.031	0.467	0.485	1	0.318	0.341
RFL/fsd	0.041	0.072	0.554	0.589	0.303	0.318	1	0.679
RFL/prc	-0.115	0.016	0.498	0.715	0.417	0.341	0.679	1
RFL total	-0.046	0.206	0.677	0.851	0.646	0.548	0.797	0.852
WCQ/1	0.035	0.046	0.267	-0.028	-0.116	-0.052	0.09	-0.084
WCQ/2	-0.137	0.036	0.046	-0.1	-0.018	-0.034	0.152	-0.017
WCQ/3	-0.046	0.174	0.109	-0.056	0.014	0.014	-0.007	-0.224
WCQ/4	0.034	0.171	0.266	0.223	0.193	0.089	0.181	0.015
WCQ/5	-0.154	0.214	0.07	-0.025	0.164	0.084	-0.006	-0.098
WCQ/6	0.069	-0.081	0.047	-0.221	-0.228	-0.095	-0.011	-0.191
WCQ/7	-0.065	0.237	0.131	0.018	0.314	0.067	0.026	0.043
WCQ/8	-0.058	0.451	0.238	0.313	0.468	0.111	0.263	0.294
WCQ total	-0.05	0.206	0.205	0.023	0.13	0.032	0.119	-0.046
MCSDS	-0.045	0.149	-0.087	0.095	0.386	0.125	0.037	-0.069
TAS	0.14	0.043	-0.045	-0.352	-0.13	-0.078	0.018	-0.329
BDI	0.146	0.093	-0.251	-0.492	-0.076	-0.03	-0.256	-0.439
BHS	-0.044	0.091	-0.417	-0.654	-0.189	-0.02	-0.334	-0.589
SBQ	-0.026	0.011	-0.256	-0.252	0.046	-0.02	-0.502	-0.139
SBQ...Q1	0.023	0.011	-0.061	-0.107	-0.013	-0.072	-0.192	0.179
SBQ....Q2	-0.125	0.049	-0.401	-0.298	0.069	0.024	-0.528	-0.261
SBQ....Q3	0.033	0.092	0.177	0.008	0.099	-0.041	-0.113	0.094
SBQ....Q4	-0.019	-0.079	-0.292	-0.21	0.042	0.052	-0.469	-0.376

VARIABLE	WCQ/1	WCQ/2	WCQ/3	WCQ/4	WCQ/5	WCQ/6	WCQ/7	WCQ/8
SEX	0.035	-0.137	-0.046	0.034	-0.154	0.069	-0.065	-0.058
AGE	0.046	0.036	0.174	0.171	0.214	-0.081	0.237	0.451
RFL/rf	0.267	0.046	0.109	0.266	0.07	0.047	0.131	0.238
RFL/s&c	-0.028	-0.1	-0.056	0.223	-0.025	-0.221	0.018	0.313
RFL/mo	-0.116	-0.018	0.014	0.193	0.164	-0.228	0.314	0.468
RFL/fs	-0.052	-0.034	0.014	0.089	0.084	-0.095	0.067	0.111
RFL/fsd	0.09	0.152	-0.007	0.181	-0.006	-0.011	0.026	0.263
RFL/prc	-0.084	-0.017	-0.224	0.015	-0.098	-0.191	0.043	0.294
RFL total	0.023	0.012	-0.041	0.218	0.037	-0.156	0.139	0.392

Appendix 1. Continued Correlation Matrix of all Variables

Where $r > .329$ is significant at the .05 level

and $r > .424$ is significant at the .01 level

VARIABLE	WCQ/1	WCQ/2	WCQ/3	WCQ/4	WCQ/5	WCQ/6	WCQ/7	WCQ/8
WCQ/1	1	0.441	0.597	0.518	0.717	0.669	0.616	0.276
WCQ/2	0.441	1	0.519	-0.037	0.424	0.636	0.467	0.151
WCQ/3	0.597	0.519	1	0.302	0.651	0.667	0.651	0.311
WCQ/4	0.518	-0.037	0.302	1	0.421	0.155	0.427	0.463
WCQ/5	0.717	0.424	0.651	0.421	1	0.596	0.775	0.378
WCQ/6	0.669	0.636	0.667	0.155	0.596	1	0.49	0.205
WCQ/7	0.616	0.467	0.651	0.427	0.775	0.49	1	0.619
WCQ/8	0.276	0.151	0.311	0.463	0.378	0.205	0.619	1
WCQ total	0.837	0.601	0.79	0.581	0.851	0.751	0.857	0.575
MCSDS	-0.063	0.014	0.136	-0.029	-0.015	-0.206	0.161	0.138
TAS	0.254	0.523	0.442	-0.113	0.24	0.514	0.156	-0.129
BDI	0.22	0.156	0.209	0.022	0.355	0.422	0.31	-0.057
BHS	0.037	0.152	0.183	-0.095	0.221	0.239	0.037	-0.249
SBQ	0.207	0.113	0.195	0.168	0.326	0.27	0.461	0.155
SBQ...Q1	-0.005	0.199	0.082	0.03	0.214	0.223	0.392	0.194
SBQ....Q2	-0.041	-0.102	0.072	0.056	0.098	0.034	0.184	0.07
SBQ....Q3	0.232	0.056	0.037	0.329	0.074	0.095	0.164	0.074
SBQ....Q4	0.42	0.107	0.329	0.182	0.449	0.308	0.46	0.083

VARIABLE	BDI	BHS	SBQ	SBQ/Q1	SBQ/Q2	SBQ/Q3	SBQ/Q4
SEX	0.146	-0.044	-0.026	0.023	-0.125	0.033	-0.019
AGE	0.093	0.091	0.011	0.011	0.049	0.092	-0.079
RFL/rf	-0.251	-0.417	-0.256	-0.061	-0.401	0.177	-0.292
RFL/s&c	-0.492	-0.654	-0.252	-0.107	-0.298	0.008	-0.21
RFL/mo	-0.076	-0.189	0.046	-0.013	0.069	0.099	0.042
RFL/fs	-0.03	-0.02	-0.02	-0.072	0.024	-0.041	0.052
RFL/fsd	-0.256	-0.334	-0.502	-0.192	-0.528	-0.113	-0.469
RFL/prc	-0.439	-0.589	-0.139	0.179	-0.261	0.094	-0.376
RFL total	-0.363	-0.521	-0.261	-0.048	-0.333	0.062	-0.307
WCQ/1	0.22	0.037	0.207	-0.005	-0.041	0.232	0.42
WCQ/2	0.156	0.152	0.113	0.199	-0.102	0.056	0.107
WCQ/3	0.209	0.183	0.195	0.082	0.072	0.037	0.329
WCQ/4	0.022	-0.095	0.168	0.03	0.056	0.329	0.182
WCQ/5	0.355	0.221	0.326	0.214	0.098	0.074	0.449
WCQ/6	0.422	0.239	0.27	0.223	0.034	0.095	0.308
WCQ/7	0.31	0.037	0.461	0.392	0.184	0.164	0.46
WCQ/8	-0.057	-0.249	0.155	0.194	0.07	0.074	0.083
WCQ total	0.282	0.089	0.326	0.223	0.063	0.193	0.403
MCSDS	-0.06	-0.079	-0.111	-0.273	0.037	-0.175	0.128
TAS	0.322	0.357	-0.06	0.006	-0.046	-0.204	-0.017
BDI	1	0.714	0.431	0.176	0.472	0.246	0.304
BHS	0.714	1	0.218	-0.073	0.327	0.103	0.278
SBQ	0.431	0.218	1	0.685	0.787	0.559	0.663
SBQ...Q1	0.176	-0.073	0.685	1	0.304	0.172	0.166
SBQ....Q2	0.472	0.327	0.787	0.304	1	0.516	0.41
SBQ....Q3	0.246	0.103	0.559	0.172	0.516	1	0.165
SBQ....Q4	0.304	0.278	0.663	0.166	0.41	0.165	1

Appendix 2. Sample of Informed Consent Form

I,understand that Mr Nicholas Kendall is a psychologist conducting research with people who behave suicidally.

The aims of the research have been explained to me as follows: to try to find out some of the ways of thinking, and events, and ways of thinking about those events that may lead to a person trying to commit suicide. This sort of information can be useful to help people who may be suicidal.

I have been told that I will be asked some questions and to do some brief questionnaires. I have also been told that my part may take at most an hour, but quite likely less, and that any questions I may wish to ask will be answered completely.

I have also been told that not taking part will in no way affect any treatment or help I might ask for now or in the future.

I understand that any answers I give will be anonymous and kept in confidence.

Signed.....

Appendix 3. Samples of Questionnaires

(presented in alphabetical order)

*Beck Depression Inventory.

*Beck Hopelessness Scale

*Marlowe-Crowne Social Desirability Scale

*Reasons For Living Inventory

*Suicidal Behaviours Questionnaire

*Toronto Alexithymia Scale

*Ways of Coping Questionnaire

Beck Depression Inventory.

On this questionnaire are groups of statements. Read each group and check the one statement in that group which best describes the way you feel today, that is, **right now**. Please be sure to read all statements in each group before making your choice.

A

- ☐ I do not feel sad
- ☐ I feel blue or sad
- ☐ I am blue or sad all the time and I can't snap out of it
- ☐ I am so sad or unhappy that it is quite painful
- ☐ I am so sad that I can't stand it

B

- ☐ I am not particularly pessimistic or discouraged about the future
- ☐ I feel discouraged about the future
- ☐ I feel I have nothing to look forward to
- ☐ I feel that I won't ever get over my troubles
- ☐ I feel that the future is hopeless and that things cannot improve

C

- ☐ I do not feel like a failure
- ☐ I feel I have failed more than the average person
- ☐ I feel I have accomplished very little that is worthwhile or that means anything

- ☐ As I look back on my life all I can see is a lot of failures
- ☐ I feel I am a complete failure as a person (parent, husband, wife)

D

- ☐ I am not particularly dissatisfied
- ☐ I feel bored most of the time
- ☐ I don't enjoy things the way I used to
- ☐ I don't get satisfaction out of anything anymore
- ☐ I am dissatisfied with every thing

E

- ☐ I don't feel particularly guilty
- ☐ I feel bad or unworthy a good part of the time
- ☐ I feel quite guilty
- ☐ I feel bad or unworthy practically all the time now
- ☐ I feel as though I am very bad or worthless

F

- ☐ I don't feel I am being punished
- ☐ I have a feeling that something bad may happen to me
- ☐ I feel I am being punished or will be punished
- ☐ I feel I deserve to be punished
- ☐ I want to be punished

G

- ☐ I don't feel disappointed in myself
- ☐ I am disappointed in myself
- ☐ I don't like myself
- ☐ I am disgusted with myself
- ☐ I hate myself

H

- ☐ I don't feel I am any worse than anybody else
- ☐ I am critical of myself for my weaknesses or mistakes
- ☐ I blame myself for my faults
- ☐ I blame myself for everything bad that happens

I

- ☐ I don't have any thoughts of harming myself
- ☐ I have thoughts of harming myself but I would not carry them out
- ☐ I feel I would be better off dead
- ☐ I feel my family would be better off if I were dead
- ☐ I have definite plans about committing suicide
- ☐ I would kill myself if I could

J

- ☐ I don't cry any more than usual
- ☐ I cry more now than I used to
- ☐ I cry all the time now. I can't stop it
- ☐ I used to be able to cry but now I can't cry at all even though I want to

K

- ☐ I am no more irritated now than I ever am
- ☐ I get annoyed or irritated more easily than I used to
- ☐ I feel irritated all the time
- ☐ I don't get irritated at all at the things that used to irritate me

L

- ☐ I have not lost interest in other people
- ☐ I am less interested in other people now than I used to be
- ☐ I have lost most of my interest in other people and have little feeling for them
- ☐ I have lost all my interest in other people and don't care about them at all

M

- ☐ I make decisions about as well as ever
- ☐ I try to put off making decisions
- ☐ I have great difficulty in making decisions
- ☐ I can't make decisions at all any more

N

- ☐ I don't feel I look any worse than I used to
- ☐ I am worried that I am looking old or unattractive
- ☐ I feel that there are permanent changes in my appearance and that they make me look unattractive

- ☐ I feel that I am ugly or repulsive looking

O

- ☐ I can work about as well as before
- ☐ It takes extra effort to get started at doing something
- ☐ I don't work as well as I used to
- ☐ I can't do any work at all

P

- ☐ I can sleep as well as usual
- ☐ I wake up more tired in the morning than I used to
- ☐ I wake up 1 - 2 hours earlier than usual and find it hard to get back to sleep
- ☐ I wake up early every day and can't get more than 5 hours sleep

Q

- ☐ I don't get any more tired than usual
- ☐ I get tired more easily than I used to
- ☐ I get tired from doing anything
- ☐ I get too tired to do anything

R

- ☐ My appetite is no worse than usual
- ☐ My appetite is not as good as it used to be
- ☐ My appetite is much worse now
- ☐ I have no appetite at all anymore

S

- ☐ I haven't lost much weight, if any, lately
- ☐ I have lost more than 5 pounds
- ☐ I have lost more than 10 pounds
- ☐ I have lost more than 15 pounds

T

- ☐ I am no more concerned about my health than usual
- ☐ I am concerned about aches and pains or upset stomach or constipation
- ☐ I am so concerned with how I feel or what I feel that it's hard to think of

much else

- ☐ I am completely absorbed in what I feel

U

- ☐ I have not noticed any recent change in my interest in sex
- ☐ I am less interested in sex than I used to be
- ☐ I am much less interested in sex now
- ☐ I have lost interest in sex completely

Beck Hopelessness Scale

I look forward to the future with hope and enthusiasm

TRUE [] FALSE []

I might as well give up because I can't make things better for myself

TRUE [] FALSE []

When things are going badly I am helped by knowing they can't stay that way for ever

TRUE [] FALSE []

I can't imagine what my life would be like in 10 years

TRUE [] FALSE []

I have enough time to accomplish the things I most want to do

TRUE [] FALSE []

In the future I expect to succeed in what concerns me most

TRUE [] FALSE []

My future seems dark to me

TRUE [] FALSE []

I expect to get more of the good things in life than the average person

TRUE [] FALSE []

I just don't get the breaks, and there's no reason to believe I will in the future

TRUE [] FALSE []

My past experiences have prepared me well for my future

TRUE [] FALSE []

All I can see ahead of me is unpleasantness rather than pleasantness

TRUE [] FALSE []

I don't expect to get what I really want

TRUE [] FALSE []

When I look ahead to the future, I expect I will be happier than I am now

TRUE [] FALSE []

Things just won't work out the way I want them to

TRUE [] FALSE []

I have great faith in the future

TRUE [] FALSE []

I never get what I want so it's foolish to want anything

TRUE [] FALSE []

It is very unlikely that I will get any real satisfaction in the future

TRUE [] FALSE []

The future seems vague and uncertain to me

TRUE [] FALSE []

Beck Hopelessness Scale *continued*

I can look forward to more good times than bad times

TRUE []

FALSE []

There's no use in really trying to get something I want because I probably won't get it

TRUE []

FALSE []

Marlowe-Crowne Social Desirability Scale

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is **TRUE** or **FALSE** about you personally.

Before voting I thoroughly investigate the qualifications of all the candidates.

TRUE [] FALSE []

I never hesitate to go out of my way to help someone in trouble

TRUE [] FALSE []

It is sometimes hard for me to go on with my work if I am not encouraged

TRUE [] FALSE []

I have never intensely disliked anyone

TRUE [] FALSE []

On occasion I have had doubts about my ability to succeed in life

TRUE [] **FALSE** []

I sometimes feel resentful when I don't get my way

TRUE [] **FALSE** []

My table manners at home are as good as when I eat out in a restaurant

TRUE [] **FALSE** []

If I could get into a movie without paying and be sure I was not seen I would probably do it

TRUE [] FALSE []

On a few occasions, I have given up doing something because I thought too little of my ability

TRUE [] FALSE []

I like to gossip at times

TRUE [] FALSE []

There have been times when I felt like rebelling against people in authority even though I knew they were right

TRUE [] FALSE []

No matter who I am talking to, I'm always a good listener

TRUE [] **FALSE** []

I can remember "playing sick" to get out of something

TRUE [] FALSE []

There have been occasions when I took advantage of someone

TRUE [] FALSE []

I'm always willing to admit it when I make a mistake

TRUE [] FALSE []

I always try to practice what I preach

TRUE [] FALSE []

I don't find it particularly difficult to get along with loud mouthed, obnoxious people

TRUE [] FALSE []

I sometimes try to get even rather than forgive and forget

TRUE [] FALSE []

When I don't know something I don't at all mind admitting it

TRUE [] FALSE []

I am always courteous, even to people who are disagreeable

TRUE [] FALSE []

At times I have really insisted on having things my own way

TRUE [] FALSE []

There have been occasions when I felt like smashing things

TRUE [] FALSE []

Marlowe-Crowne Social Desirability Scale *continued*

I would never think of letting someone else be punished for my wrongdoings

TRUE []

FALSE []

I never resent being asked to return a favour

TRUE []

FALSE []

I have never been irked when people expressed ideas very different from my own

TRUE []

FALSE []

I never make a long trip without checking the safety of my car

TRUE []

FALSE []

There have been times when I was quite jealous of the good fortune of others

TRUE []

FALSE []

I have almost never felt the urge to tell someone else off

TRUE []

FALSE []

I am sometimes irritated by people who ask favours of me

TRUE []

FALSE []

I have never felt I was punished without cause

TRUE []

FALSE []

I sometimes think when people have a misfortune they only got what they deserved

TRUE []

FALSE []

I have never deliberately said something that hurt someone's feelings

TRUE []

FALSE []

Reasons For Living Inventory

at all	not important important				very
I have a responsibility and commitment to my family.....0	1	2	3	4	5
I have the courage to face life.....0	1	2	3	4	5
Life is all we have and is better than nothing.....0	1	2	3	4	5
I have hope that things will improve and the future will be happier.....0	1	2	3	4	5
I have a love of life.....0	1	2	3	4	5
My religious beliefs forbid it.....0	1	2	3	4	5
I am a coward and do not have the guts to do it.....0	1	2	3	4	5
I would not want people to think I did not have control over my life.....0	1	2	3	4	5
I am too stable to kill myself.....0	1	2	3	4	5
I want to watch those my age as they grow older.....0	1	2	3	4	5
I believe I can find a purpose in life, a reason to live.....0	1	2	3	4	5
Life is too beautiful and precious to end it.....0	1	2	3	4	5
I see no reason to hurry death along.....0	1	2	3	4	5
It would not be fair to leave others my age behind.....0	1	2	3	4	5
I would not want my family to feel guilty afterwards.....0	1	2	3	4	5
I believe I have control over my life and destiny.....0	1	2	3	4	5
I believe everything has a way of working out for the best.....0	1	2	3	4	5
I am concerned about what others would think of me.....0	1	2	3	4	5
I would not want my family to think I was selfish or a coward.....0	1	2	3	4	5
I still have many things left to do.....0	1	2	3	4	5
I have a desire to live.....0	1	2	3	4	5
I believe killing myself would not really accomplish or solve anything.....0	1	2	3	4	5
I am afraid of the unknown.....0	1	2	3	4	5
I believe I can learn to adjust or cope with my problems.....0	1	2	3	4	5
I want to experience all that life has to offer and there are many experiences I haven't had yet which I want to have.....0	1	2	3	4	5

Reasons For Living Inventory *continued*

	at all	important important	not		very
I do not want to die.....0	1	2	3	4	5
My family might believe I did not love them.....0	1	2	3	4	5
I am afraid that my method of killing myself might fail.....0	1	2	3	4	5
I am afraid of the actual "act" of killing myself (the pain, blood, violence).....0	1	2	3	4	5
I care enough about myself to live.....0	1	2	3	4	5
My family depends upon me and needs me.....0	1	2	3	4	5
I believe I can find other solutions to my problems.....0	1	2	3	4	5
I do not believe that things get miserable or hopelessness enough that I would rather be dead.....0	1	2	3	4	5
It would hurt my family too much and I would not want them to suffer.....0	1	2	3	4	5
I have future plans I am looking forward to carrying out.....0	1	2	3	4	5
I could not decide where, when, and how to do it.....0	1	2	3	4	5
I am happy and content with my life.....0	1	2	3	4	5
I am curious about what will happen in the future.....0	1	2	3	4	5
The effect on others my age could be harmful.....0	1	2	3	4	5
I am afraid of death.....0	1	2	3	4	5
I consider it morally wrong.....0	1	2	3	4	5
I love and enjoy my family too much and could not leave them.....0	1	2	3	4	5
I am so inept that my method will not work.....0	1	2	3	4	5
No matter how badly I feel, I know that it will not last.....0	1	2	3	4	5
I am afraid of going to hell.....0	1	2	3	4	5
Other people would think I am weak and selfish.....0	1	2	3	4	5
I believe only God has the right to end a life.....0	1	2	3	4	5

Suicidal Behaviours Questionnaire

Please answer these four questions by ticking or circling the appropriate number.

1. Have you ever seriously considered or attempted to kill yourself?

Never

Very often

1 2 3 4 5 6

2. How often have you thought about killing yourself in the past year?

Never

Very often

1 2 3 4 5

3. Have you ever told someone that you were going to commit suicide, or that you might do it?

Never

Maybe

At least once

1 2 3

4. How likely is it that you will attempt suicide someday ?

Very likely

Very unlikely

1 2 3 4 5

Toronto Alexithymia Scale

Please mark the following items as they refer to you with a tick or a cross

When I cry I always know why

true[] fairly true[] don't know[] not really true[] not true[]

Daydreaming is a waste of time

true[] fairly true[] don't know[] not really true[] not true[]

I wish I were not so shy

true[] fairly true[] don't know[] not really true[] not true[]

I often get confused about what emotion I am feeling

true[] fairly true[] don't know[] not really true[] not true[]

I often daydream about the future

true[] fairly true[] don't know[] not really true[] not true[]

I seem to make friends as easily as others do

true[] fairly true[] don't know[] not really true[] not true[]

Knowing the answers to problems is more important than knowing the reasons for the answers

true[] fairly true[] don't know[] not really true[] not true[]

It is difficult for me to find the right words for my feelings

true[] fairly true[] don't know[] not really true[] not true[]

I like to let people know where I stand on things

true[] fairly true[] don't know[] not really true[] not true[]

I have physical sensations that even doctors don't understand

true[] fairly true[] don't know[] not really true[] not true[]

It's not enough for me that something gets the job done; I need to know why and how it works

true[] fairly true[] don't know[] not really true[] not true[]

I'm able to describe my feelings easily

true[] fairly true[] don't know[] not really true[] not true[]

I prefer to analyze problems rather than just to describe them

true[] fairly true[] don't know[] not really true[] not true[]

When I'm upset I don't know if I'm sad, frightened or angry

true[] fairly true[] don't know[] not really true[] not true[]

Toronto Alexithymia Scale *continued*

I use my imagination a great deal

true[] fairly true[] don't know[] not really true[] not true[]

I spend much time daydreaming whenever I have nothing else to do

true[] fairly true[] don't know[] not really true[] not true[]

I am often puzzled by sensations in my body

true[] fairly true[] don't know[] not really true[] not true[]

I daydream rarely

true[] fairly true[] don't know[] not really true[] not true[]

I prefer to just let things happen rather than to understand why they turned out that way

true[] fairly true[] don't know[] not really true[] not true[]

I have feelings that I can't quite identify

true[] fairly true[] don't know[] not really true[] not true[]

Being in touch with emotions is essential

true[] fairly true[] don't know[] not really true[] not true[]

I find it hard to describe how I feel about people

true[] fairly true[] don't know[] not really true[] not true[]

People tell me to describe my feelings more

true[] fairly true[] don't know[] not really true[] not true[]

One should look for deeper explanations

true[] fairly true[] don't know[] not really true[] not true[]

I don't know what's going on inside me

true[] fairly true[] don't know[] not really true[] not true[]

I often don't know why I'm angry

true[] fairly true[] don't know[] not really true[] not true[]

Ways of Coping Questionnaire

Please read each item below and indicate, by ticking the appropriate category, to what extent you used it in the *most stressful encounter* that occurred in the last *seven days*.

Just concentrated on what I had to do next---the next step

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

I did something which I didn't think would work, but at least I was doing something

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Tried to get the person responsible to change his or her mind

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Talked to someone to find out more about the situation

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Criticized or lectured myself

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Tried not to burn my bridges, but leave things open somewhat

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Hoped a miracle would happen

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Went along with fate; sometimes I just have bad luck

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Ways of Coping Questionnaire *continued*

Went on as if nothing had happened

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

I tried to keep my feelings to myself

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Looked for the silver lining, so to speak; tried to look on the bright side of things

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Slept more than usual

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

I expressed anger to the person(s) who caused my problem

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Accepted sympathy and understanding from someone

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

I was inspired to do something creative

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Tried to forget the whole thing

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

I got professional help

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Ways of Coping Questionnaire *continued*

Changed or grew as a person in a good way

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

I apologized or did something to make up

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

I made a plan of action and followed it

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

I let my feelings out somehow

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Realized I brought the problem on myself

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

I came out of the experience better than when I went in

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Talked to someone who could do something concrete about the problem

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, and so forth

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Took a big chance or did something very risky

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Ways of Coping Questionnaire continued

I tried not to act too hastily or follow my first hunch

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Found new faith

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Rediscovered what is important in life

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Changed something so things would turn out alright

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Avoided being with people in general

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Didn't let it get to me; refused to, think about it too much

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

I asked a relative or friend I respected for advice

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Kept others from knowing how bad things were

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Made light of the situation; refused to get too serious about it

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Ways of Coping Questionnaire continued

Talked to someone about how I was feeling

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Stood my ground and fought for what I wanted

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Took it out on other people

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Drew on my past experiences; I was in a similar position before

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

I knew what had to be done, so I doubled my efforts to make things work

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Refused to believe that it had happened

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

I made a promise to myself that things would be different next time

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Came up with a couple of different solutions to the problem

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

I tried to keep my feelings from interfering with other things too much

- 0 ☐ does not apply and/or not used
- 1 ☐ used somewhat
- 2 ☐ used quite a bit
- 3 ☐ used a great deal

Ways of Coping Questionnaire *continued*

I changed something about myself

- 0 ☐ does not apply and/or not used
1 ☐ used somewhat
2 ☐ used quite a bit
3 ☐ used a great deal

Wished that the situation would go away or somehow be over with

- 0 ☐ does not apply and/or not used
1 ☐ used somewhat
2 ☐ used quite a bit
3 ☐ used a great deal

Had fantasies about how things might turn out

- 0 ☐ does not apply and/or not used
1 ☐ used somewhat
2 ☐ used quite a bit
3 ☐ used a great deal

I prayed

- 0 ☐ does not apply and/or not used
1 ☐ used somewhat
2 ☐ used quite a bit
3 ☐ used a great deal

I went over in my mind what I would say and do

- 0 ☐ does not apply and/or not used
1 ☐ used somewhat
2 ☐ used quite a bit
3 ☐ used a great deal

I thought about how a person I would admire would handle the situation and used that as a model

- 0 ☐ does not apply and/or not used
1 ☐ used somewhat
2 ☐ used quite a bit
3 ☐ used a great deal

Appendix 4.

Copy of letter providing ethical approval for the current study.



Canterbury
Hospital
Board

Office of the Medical Superintendent-in-Chief

Private Bag, Christchurch, New Zealand Telephone 840-135

When replying please quote

22 May 1989

Mr Kendall,
Clinical Psychology Department,
University of Canterbury,
Private Bag,
CHRISTCHURCH.

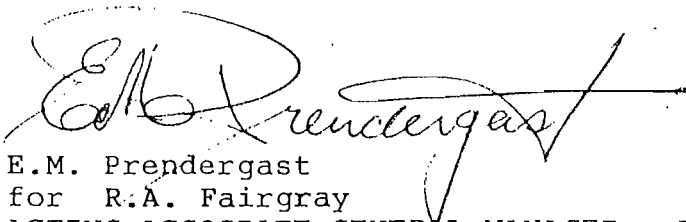
Dear Mr Kendall,

RE: RESEARCH PROTOCOL

The Ethical Committee has considered your research protocol entitled "Youth - Youth Suicide" and has no ethical objections to the proposals.

Approval is given for the study to proceed in accordance with the protocol submitted.

Yours sincerely,



E.M. Prendergast
for R.A. Fairgray
ACTING ASSOCIATE GENERAL MANAGER - PATIENT CARE